

**MASTER'S DEGREE FOR SECONDARY
EDUCATION, VOCATIONAL TRAINING
AND LANGUAGE TEACHING**

**TEACHING ENGLISH LANGUAGE AND
LITERATURE**

MASTER'S THESIS



**An experimental comparison of Cognitive
versus Traditional approaches to teaching
the prepositions *in, on, at***

MODALITY: EDUCATIONAL RESEARCH

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LIST OF ABBREVIATIONS

CL	Cognitive Linguistics
CS	Cognitive Semantics
ESO	<i>Enseñanza Secundaria Obligatoria</i> (Compulsory Secondary Education)

ABSTRACT

When learning a new language, prepositions are as commonly used as they are difficult to master. In the Spanish learning context, the first and most common prepositions to be taught in Secondary Education are the lexical units in, on, at. However, the fact that the teaching of these prepositions comes early does not mean that they are easy to learn. In fact, teaching materials have typically assumed that prepositions are used in a non-systematic way, thus dealing with them from a collocational perspective.

Against that position, research on the field of Cognitive Linguistics (henceforth CL) has demonstrated that only a small minority of prepositional uses are thoroughly idiomatic. According to this discipline, there exist two positions in relation to prepositional meaning, namely monosemy and polysemy. Following the latter perspective, Navarro i Ferrando (1998) has developed a theoretical model in which the meanings of the prepositions in, on and at can be described by radial networks containing spatial, force-dynamic and functional semantic elements.

In the present study, the effectiveness of this model in teaching the prepositions in, on, at has been tested. For this purpose, an experiment has been designed in which two groups of 4 ESO are taught the target prepositions following two different approaches: a CL one and a traditional one. Thus, it is hypothesised that after the study, the group following the CL approach will present a higher improvement in their command of the target prepositions than the group taught by means of a traditional approach.

The overall results obtained in the experiment corroborate the hypothesis stated above, thus proving the advantages that a field such as CL can offer to the sphere of language teaching. However, the results also suggest the necessity of further research that helps to understand the extent to which factors such as motivation can influence the success of this approach.

Keywords: prepositions, polysemy, Cognitive Linguistics, radial network, proto-concept

1. INTRODUCTION

When learning a new language, prepositions are as commonly used as they are difficult to master. In fact, in my experience as a *Practicum* Secondary School teacher in the IES Francesc Ribalta (Castellón), I have observed a common tendency among students to struggle with the use of prepositions. This observation coincides with my own experience as an English learner, as well as with the general literature on this topic.

In the Spanish learning context, the first and most common prepositions to be taught in Secondary Education are the lexical units *in*, *on*, *at*. However, the fact that the teaching of these prepositions comes early does not mean that they are easy to learn. Indeed, the similarities between their meanings make them particularly difficult to distinguish for Spanish learners, who usually think that they can translate them into the “equivalent” in their mother tongue *en* (Navarro i Ferrando, 1998; 2000).

This simplistic vision of prepositions is not exclusive to students, since linguists have also tended to deal with them by ignoring their semantic properties and focusing on their syntactic function instead. Thus, prepositions are usually relegated to the status of easy words the usage of which is considered chaotic or idiomatic (Navarro i Ferrando, 1998; 2006).

Accordingly, teaching materials not only devote little space to dealing with prepositions, but also present them from a collocational approach. Because of this, learners are forced to learn them phrase by phrase, what implies a great amount of rote learning to get familiar with only a small set of meanings (Lindstromberg, 1996; 1998).

However, in the last decades it has been demonstrated that only a small minority of prepositional uses are thoroughly idiomatic. A field which has paid much attention to this topic is that of Cognitive Linguistics, and more specifically Cognitive Semantics (henceforth CS), both from a theoretical and a pedagogical perspective (Boers, 2013; Boers and Demecheleer, 1998; Bratož, 2014; Feist, 2000; Johnson, 1987; Lakoff, 1987; Lindstromberg, 1996; 1998; Navarro i Ferrando, 1998; 2000; 2006; Navarro i Ferrando, Campoy & Caballero, 2001; Song, 2013; Tyler and Evans, 2003).

In the light of that research, the aim of this Thesis is to test the effectiveness in teaching the prepositions *in*, *on*, *at* of an approach based on a theoretical model developed by Navarro i Ferrando (1998), following a CL approach to prepositional semantics. For this purpose, an experiment has been designed in which two groups of 4ESO are taught the prepositions *in*, *on*, *at* from two different perspectives: one, following the CL approach mentioned above; the other, by means of a traditional approach based on collocations. In order to compensate

for the differences in their command of English, the class with an overall lower English level follows the CL approach, while the group with better English proficiency follows the traditional one.

Taking into account the characteristics of the two groups, our initial hypothesis is that, after the study, the group following a CL approach will present a higher improvement in their command of the target prepositions than the group taught by means of a traditional approach. If this hypothesis is met, the present study could provide further evidence for the benefits that the field of CL, and particularly the cognitive approach to prepositional semantics, may offer to the world of language pedagogy.

2. THEORETICAL FRAMEWORK

In English, prepositions are the main tool to describe spatial relations. From a CL point of view, language is considered to reflect the real world, so that spatial relations expressed linguistically are conceptualisations or abstractions of physical ones. The perception of recurrent experiences conjugating the same aspects of space allows for humans to conceptualise spatial scenes in the form of a series of image schematic structures (Johnson, 1987; Lakoff, 1987; Navarro i Ferrando, 2012). Image schemas are dynamic structures based on bodily experience that appear first in children's pre-linguistic experience and are successively applied in order to make sense of new experiences.

In terms of their image schematic configuration, spatial concepts are relational and need two other entities in the construal event for conceptualisation to take place (Langacker, 1987; Navarro i Ferrando, 1998; 2000; 2006; Silvestre López and Navarro i Ferrando, 2007). These are the trajector (henceforth Tr) and the landmark (henceforth Lm), whose relationship is asymmetrical. The former is the localised entity; although its name suggests movement, it appears both in static and dynamic relations. The latter, being the complement of the preposition, functions as background or reference point for the Tr.

2.1. Traditional approaches to prepositions

The meanings of prepositions are typically defined by the most salient dimension(s) appreciated in the configurations conjugated by the use of each spatial particle. Grammar books nowadays still present an outdated vision on prepositional meaning, which has traditionally been developed following a geometric or topological approach (Navarro i Ferrando, 1998; 2006; Silvestre López and Navarro i Ferrando, 2007).

Navarro i Ferrando (1998; 2000; 2006) classifies the main descriptions of prepositional meaning into two different positions:

- A position based on monosemy, which defines prepositional meaning as a *core sense* and presents two trends:
 1. The *core sense* determines all the uses of a preposition, whereas the context provides meaning aspects extrinsic to the spatial concept.
 2. The *core sense* is present in all the contexts where a preposition occurs. These introduce meaning nuances that can be ascribed to the preposition.

- The second position considers prepositions as polysemous items, with both prototypical and non-prototypical senses. These can be derived from a basic image-schema by means of family resemblances and image schema transformations.

In the *core sense* approaches, the description of *in*, *on*, *at* has followed the topological or geometric configurations mentioned above. In relation to these, Feist (2000) provides an account of its main exponents, which is summarised below.

The first geometric descriptions of the semantics of prepositions were the ones developed by Lindkvist and Bennett in 1950 and 1975, respectively. Both authors considered the geometry of the scene in order to differentiate the usages of the prepositions *in* and *on*. Talmy (1983) proposed that spatial terms represent only a series of selected aspects from a referent spatial scene through a process he called “schematisation” (as cited in Feist, 2000, p. 27). Overall, these descriptions have considered geometric factors such as verticality, contact between the Tr and the Lm, or inclusion of the Tr in the Lm.

Apart from the geometry of the scene itself, the geometry of the Lm has also been traditionally considered important in accounts such as the ones developed in 1975 by Bennett or in 1986 by Herskovits (as cited in Feist, 2000, p. 28). Some of the views corresponding to this approach claim that *at* should be used when the prepositional object is conceptualised as a point; *on*, when it is seen as a line or surface; and *in*, in the case of areas and volumes. One of the reasons why geometric approaches to prepositional meaning are so pervasive is that geometry is a highly salient aspect to human perception. However, descriptions based on geometry have a series of limitations. On the one hand, there exists a series of spatial usages which cannot be explained by this type of accounts. On the other hand, they are unable to explain the reasons why it is possible to describe particular scenes using different prepositions without a change in the spatial relation between the Tr and the Lm. To this, Navarro i Ferrando adds that prepositions like *in*, *on* and *at* can be used with any type of Lm dimensionality (1998; 2000; 2006).

2.2. The polysemy approach to prepositions

Given the inadequacy of topological approaches in determining the type of relationship established between two entities, the polysemy approach tries to introduce further aspects to the analysis of relational concepts:

- Topology: The visual perception of objects gives the speaker clues for establishing and conceptualising topological relations such as coincidence, contact, inclusion, proximity, etc.
- Force-dynamics: The human experience of self-motion and object motion provides the clues for conceptualising patterns of interaction in terms of force-dynamics.
- Function: The experience of the effects of interaction, as well as the consequences of those effects, give rise to functional patterns in the conceptualisation of spatial relationships between different entities (Navarro i Ferrando, 2006, p. 171).

The consideration of these dimensions in the conceptualisation of spatial relations would be in line with one of the main principles of CL, i.e. the embodiment hypothesis (Lakoff, 1987; Varela et al., 1981). This perspective claims that human conceptualisation of reality is both constrained by our perceptual and cognitive capacities, and strongly rooted in bodily experience as well as in physical and social interaction. In other words, “the conceptualisation of both force-dynamic and functional relationships is as primary as the conceptualisation of topological ones in the acquisition of spatial concepts” (Navarro i Ferrando and Tricker, 2001, p. 296).

Following the polysemy approach, Navarro i Ferrando (1998; 2000; 2006) describes the primary meanings of the prepositions *in*, *on*, *at* as *conceptual schemas* or *proto-concepts* conformed by the three dimensions detailed above. “*Proto-concepts* are family-resemblance configurations where some aspects may be focused upon, while others constitute a background in the conceptualisation of a particular situation” (2006, p. 173). From these *proto-concepts*, specialised and extended meanings are derived, resulting in a semantic structure shaped as a radial network. In this network, the *proto-concept* is situated at the centre, and the peripheral meanings arise by its extension through the topological, dynamic and functional conceptual regions conjugated in the spatial relationship.

The mechanisms that produce these derived meanings (i.e., polysemy) are, according to Navarro i Ferrando (1998; 2006) *shifts*, implying slight modifications of the conceptual schema (e.g. rotation), *partial sanction*, giving salience to particular configurations (i.e. specialisation of meaning), and *metaphorical mappings* from the physical to the abstract domains, prompting figurative meanings.

2.3. Theoretical background

In CL, the ideas developed above in relation to cognition are also extrapolated to the field of language and language pedagogy. In this sense, the experience gained through the cognitive and perceptual capacities involved in human interaction with the world determines the way in which language works. Taking this into account, some linguistic phenomena are more likely to occur than others because of their coherence with human experience, i.e., they are “motivated” (Boers, 2013, p. 211). However, this motivation is not always transparent for language learners.

According to the polysemy approach, prepositions are an example of motivated language items, in which the different senses of each spatial particle derive from a primary sense and extend conforming a semantic network. However, English teaching materials, and teachers in general, have tended to treat the semantics of prepositions from a “collocational approach” (Lindstromberg, 1996, p. 227). This means that learners have not been shown the links between the different meanings of prepositions, but rather have had to memorise them one by one, a practice that implies lots of rote learning.

Against that position, the advantage of the polysemy approach to prepositions in terms of pedagogy is that it can help learners to deal with their semantic structure as an overall meaning conformed by a relatively small number of related meanings more or less systematically combined. Thus, it allows for enquiries into what individual words mean, as opposed to what phrases they occur in, what can lead to a decrease in the memorisation effort that students have to perform (Lindstromberg, 1996).

Several important works have been published in relation to the semantics of prepositions from a polysemous perspective. Among these, it is worth commenting on the following.

Lindstromberg’s 1998 work consists of a compilation of explanatory materials on more than 70 prepositions and other spatial particles. The main characteristic of this work is that it has not been designed to be used by linguists, but rather it is addressed to users of prepositions in general. In each chapter, the author brings together a set of spatial particles related to each other according to different aspects of their meanings, e.g. the shape of the Lm (e.g. Lm as *container*, Lm as *surface*). In many cases, the explanations are developed by contrasting the meanings of the different spatial particles (e.g. “*On vs in*” in Chapter 5), and are illustrated by icons.

From a theoretical point of view, the author draws mainly from Lakoff and Johnson’s 1990 work (as cited in Lindstromberg, 1998, p. 7), as well as from Lakoff (1987). Thus, although

it is not explicitly stated, Lindstromberg follows a Cognitive approach to prepositional semantics. Accordingly, the author describes the “prototypical mental image of ‘*in-ness*’ [as] that of a Landmark enclosing a Subject [Tr]” (1998, p. 29, my italics); the central sense of *on* as conjugating a “[Tr] in contact with a line from the top (...) or with the upper surface of a plane or solid” (1998, p. 52). Regarding *at*, the author states that:

When it is used spatially, *at* is imprecise about the relation between the Subject and the Landmark. It differs from *in* by not characterising the Subject as bracketed or enclosed by the Landmark and from *on* by not entailing contact with a surface. *At* is also wholly neutral about the relative sizes of the Landmark and the Subject [...]. Owing to the subtlety of its meaning, *at* is perhaps the most troublesome preposition for foreign learners (1998, p. 165).

With regards to our focus, Lindstromberg’s work lacks the systematisation required to provide a comprehensive account on the meaning of prepositions. Indeed, not only the relations between the different senses expressed by each spatial particle are not stated explicitly, but also the descriptions presented above are mainly geometric. Despite this, the analysis performed by the author could be useful in practical terms, either by adapting his explanations to the design of teaching materials and activities, or by using them in what Boers calls “distributed learning” (2013, p. 216). The latter refers to the teaching of prepositional senses as they “come up in context” (2013, p. 217), in opposition to the provision of a complete description of prepositional meanings at once.

In their 2003 work, Tyler & Evans perform an exhaustive analysis of English prepositions from a CL perspective. In order to do so, the authors design a replicable methodology for determining the distinct senses as well as the primary sense of each spatial particle. In this sense, they argue that the spatial scenes profiled by prepositions consist of both configurational as well as functional elements arising from human experiential interaction with space (2003, p. 50).

Thus, *in* is described as expressing the concept of containment. In this type of spatial configuration the Tr is located within a Lm presenting an interior, an exterior and a boundary. Nevertheless, this configuration allows for some flexibility, as it does not always involve “canonical three-dimensional LMs” (2003, p. 184). In addition, the Lm exerts an influence on the Tr, since the former constrains the latter. The authors do not offer a formal analysis of our other target particles; nonetheless, they suggest that *on* indicates contact between a Tr and a two dimensional planar Lm, whereas *at* indicates proximity between a Tr and a Lm in a location conceptualised as a point (2003, p. 178).

Concerning our focus, Tyler & Evans' (2003) approach to the semantics of prepositions can be considered as similar to the one followed by Navarro i Ferrando (1998; 2000; 2006) in that it incorporates functional elements in the description of prepositional meanings. Their methodology to identify the different senses and the primary sense associated to spatial particles seems useful for the development of an as accurate as possible analysis of each preposition; however, this task goes beyond the scope of the present Thesis. In sum, Tyler & Evans' (2003) work attests the convenience of approaching prepositional semantics from a polysemous perspective, although it provides little new information about the spatio-functional configurations coded by our target prepositions.

Song (2013) undertakes an experimental comparison of a CL and a traditional approach to teaching the spatial, temporal and abstract usages of the prepositions *in*, *on* and *at*. For this purpose, the author designed a set of explanatory lessons and activities following the two distinct approaches, which were delivered to students after performing a pre-test and before performing a post-test.

Regarding the CL approach followed by Song (2013), the author suggests that the several meanings of prepositions can be described by different image-schematic configurations. These configurations essentially contain spatial and dynamic elements, the predominance of which depends on the context where they appear. In order to illustrate the primary meanings of the target prepositions, Song includes in his teaching materials representations of simplified versions of these schemas: "CONTAINMENT for *in*, CONTACT for *on*, and ADJACENCY for *at*" (2013, p. 29).

In contrast, the traditional approach in Song's (2013) experiment involves providing students with lists including the different definitions of the prepositions *in*, *on* and *at*, taken from the *Oxford Advanced Learner's Dictionary* (Hornby et al., 2005). In this sense, the author defines this approach as a "dictionary-based rote learning method" (2013, p. 69).

The results of Song's (2013) study show that the students following a CL approach performed better in the post-test and showed more improvement between the pre-test and the post-test, particularly those with a higher English level. Notwithstanding, participants at a lower proficiency level benefitted more from the traditional approach in some of the variables considered in the experiment. The author argues that this is due to the cognitive abilities of the lower proficiency students being less developed than the ones of their counterparts, a condition that would make the former unable to perform the cognitive operations required to follow the CL approach (2013, p. 170).

A problem with this argument is that the author equates the students' proficiency in the English language with their capacity to use formal operational thinking. On the one hand, although the capacity to use formal operations affects the mastery of a foreign language, it should not be taken as its only determinant factor, since variables such as attendance to extracurricular English lessons could also have an important influence as well.

On the other hand, all students participating in the experiment were around the same age, so it would be logical to assume that their capacity to use cognitive operations was similar. Therefore, it should be considered that their aptitude to follow the CL approach was similar as well. The present Thesis advocates for the latter position, as it is hypothesised that a lower proficiency group taught by means of a CL approach will improve more their command of the target prepositions than a higher proficiency group following a traditional approach.

Despite the discrepancy described above, the results of Song's experiment would be consistent with our hypothesis, as the students following a CL approach to teaching the semantics of prepositions showed greater improvement than the ones taught by means of a traditional approach. Apart from this, Song's (2013) work constitutes one of the few available examples that I have found for the design and implementation of teaching materials following the CL theoretical treatment of the semantics of prepositions. In fact, both Song's posters and exercises have served as reference for the creation of the explanations and activities used in the present study.

Finally, one of the latest research projects dealing with the application of CL theory to the field of English teaching is the one carried out by Johansson Falck (2018). Despite being based on the CL tenets that meaning is embodied, and that abstract concepts are understood in terms of concrete ones, the author's approach to teaching prepositions is different to all the works mentioned above. Indeed, rather than focusing on the relations between the different senses of prepositions, Johansson Falck (2018) proposes paying attention to their complements instead.

Thus, when dealing with the abstract usages of the prepositions *in* and *on*, the author suggests that the concepts referred to by the terms accompanying them are motivated by human bodily experience with the spatial relations instantiated by these prepositions. In other words, the abstract uses of *in* derive from a spatial relation where a Tr is located within a Lm containing it, while abstract *on* uses emerge from a spatial relation mediating contact and support between a Tr and a Lm (Tyler and Evans, 2007; as cited in Johansson Falck, 2018, p. 286). According to this view, an example of category instantiated by abstract *in* includes "phrases that refer to cognitive concepts such as thoughts, feelings, opinions, or human qualities,

[construed] in line with the fact that our own bodies, minds, and heads may be perceived as containers for certain bodily processes and qualities” (2018, pp. 287-288). Likewise, examples of the abstract usages of *on* can also refer to concepts such as thoughts or opinions. However, in the conceptualisation of these categories, the aspect focused on is not their content, but rather the relationship between people’s opinions or thoughts and the topics on which they have those opinions or thoughts. Therefore, the spatial structure conjured by these instances would be that of the trajectory of people’s thoughts –or in more general terms, of language– onto other abstract concepts, or, simply put, “that of a person putting an object on another object” (2018, p. 290).

On the basis of these theoretical principles, Johansson Falck (2018) designed two qualitative studies involving a small number of Swedish students. In these experiments, learners were presented a series of phrases containing instances of abstract usages of *in* and *on* together with their accompanying categories. In relation to these, students were asked to collaboratively perform actions such as discussing the location of thoughts and feelings in the body, or drawing the possible motivation for the instances of abstract uses of *in* and *on*. After the study, learners were given some questionnaires in which they reported that they had increased their knowledge on the abstract usages of the target prepositions, and more importantly, that they had enjoyed doing so.

Concerning our study, the main advantage of Johansson Falck’s (2018) approach is that it can be applied to the design of engaging activities for Secondary School students. In particular, it is interesting to see how the author has been able to implement activities that foster collaborative learning and therefore result more motivating for students, who usually do not show much enthusiasm about prepositions. Moreover, the author presents an innovative perspective on the description and teaching of the abstract usages of prepositions, which students often regard as difficult to learn.

However, the author’s exclusive concern about the abstract usages of *in* and *on* not only goes beyond the scope of the present study, but also may imply the necessity of complementing it with an approach to teaching the spatial usages in the first place. This is due to the fact that it could be beneficial for students to understand firstly the concrete usages from which the abstract ones emerge. In addition, the small number of participants, as well as the lack of objective instruments to measure the students’ gains in accuracy, suggest that the results obtained in this experiment are limited as evidence for the usefulness of Johansson Falck’s (2018) approach to the field of language pedagogy.

2.4. A model for the polysemy of *in*, *on*, *at*

To finish with this section, an outline of Navarro i Ferrando's (1998; 2006) models for the multimodal semantic structure of the prepositions *in*, *on*, *at* is presented below.

2.4.1. *In*: proto-concept of CONTAINMENT

The conceptual schema instantiated by *in* can be defined by the term CONTAINMENT (Table 1). Human experience with this type of schema determines that it is composed of the following elements. According to the force-dynamic configuration, the Tr may be either static within the interior region defined by the Lm, or dynamic, moving within the interior or from the exterior to the interior of the Lm. In any case, the Lm prevents the Tr from moving outside. Regarding the topological configuration, the Lm defines an interior space where the Tr, being smaller, is located. The functional dimension defines the relationship of control of the Lm over the Tr as one of reclusion or protection.

Topological axis	Dynamic axis	Functional axis
<p>Inclusion</p> <p>Lm defines boundaries of a region where the Tr is located</p>	<p>Static Tr within region defined by Lm</p> <p>Dynamic Tr defining a trajectory within interior of Lm or from exterior to interior</p> <p>Lm prevents Tr from moving outwards</p>	<p>Control</p> <p>Reclusion or Protection of Lm over Tr</p>

Table 1. Summary of the topological, dynamic and functional elements conjured by the proto-concept of CONTAINMENT (*in*)

As mentioned in *Section 2.2.*, the semantic structure of prepositions can be represented as a *conceptual schema* with the shape of a *radial network* (Figure 1). In the radial network for *in*, the central element corresponds to the proto-concept of ENCLOSURE, renamed CONTAINMENT (Navarro i Ferrando, 2006). This is also the *primigenial sense*, as it is

considered to be the first usage learnt by children. The senses surrounding the central meaning, i.e. peripheral senses, are assumed to have been acquired later, and emerge through meaning extensions from the central meaning. These extensions are first generated through image-schema transformations, and then by means of mechanisms such as “blending spaces, semantic bleaching, or double highlighting” for further specialisations (1998, p. 145). Each prepositional usage gives salience to particular perceptual aspects, which give rise to the conceptual regions where the different senses extend, namely topological, force-dynamic and functional. These regions do not present clear-cut borders, but rather form a continuum where the distance between the different senses reflects the extent to which they are related.

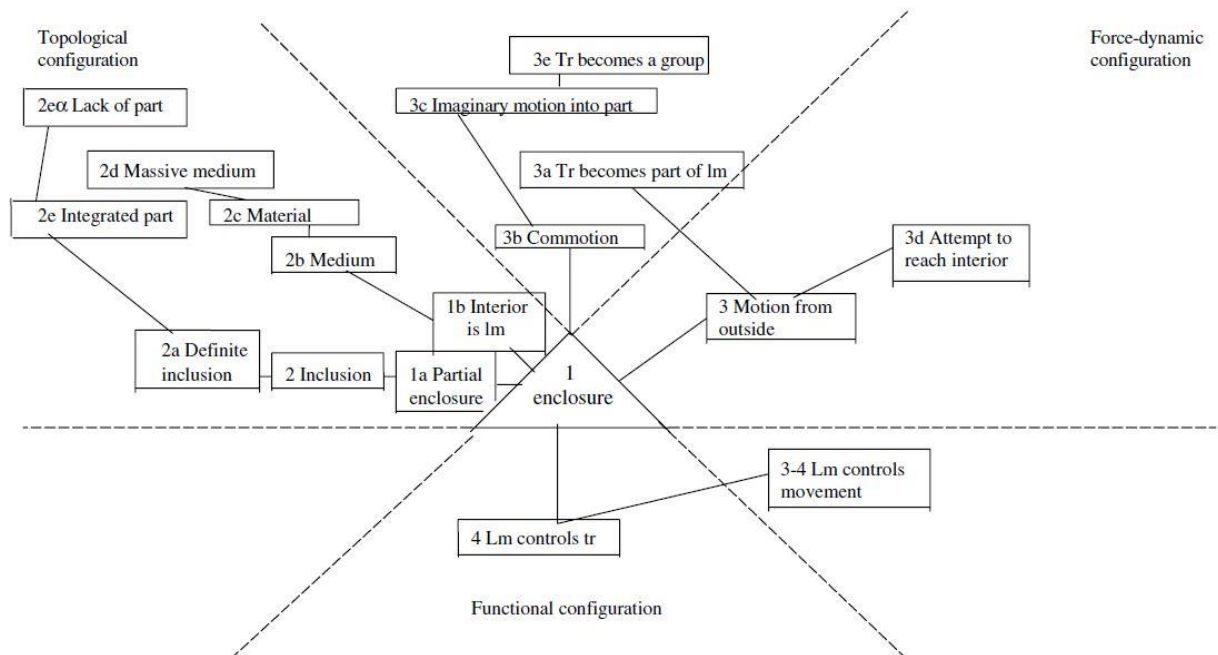


Figure 1. Radial category for in (Navarro i Ferrando, 1998, p. 266)

2.4.2. On: proto-concept of SUPPORT

The conceptual schema of *on* can be defined by the term SUPPORT (Table 2). The configuration defined by human experience with this schema can be described as including the following elements. On the one hand, the force-dynamic dimension determines that the resting side of the Tr and its orientation towards the Lm define the motion axis. Prototypically, this corresponds to the vertical axis with respect to the human canonical standing position, so the Tr exerts force downwards; however, the vertical axis may rotate

in situations where the position of Tr's resting side does not coincide with the human one. According to topological configuration, the relationship between the Tr and the Lm is one of contact, involving the outside part of the Lm and the resting part of the Tr. Last, in relation to the functional dimension, the Tr holds control of the situation. It may be prototypically self-control, or motion control, which may be extended to the Lm.

Topological axis	Dynamic axis	Functional axis
Contact Outside part of Lm-resting side of Tr	Orientation Tr's resting side towards Lm Motion Perpendicular to the ground Direction Vertical (Tr exerts force downwards)	Control Self-control or motion control of Tr over Lm

Table 2. Summary of the topological, dynamic and functional elements conjured by the proto-concept of SUPPORT (on)

In the radial network representing the semantic structure of *on* (Figure 2), the proto-concept of SUPPORT, which is also considered to be the first usage acquired by children, is situated at the centre of the net. The peripheral senses are situated around the central meaning. This situation indicates both that native speakers learn them later, and that they emerge from the central meaning through meaning extensions. At the first level of specialisation, these extensions are first generated through image-schema transformations highlighting one of the perceptual aspects (topological, force-dynamic, or functional). Further specialisations take place by means of mechanisms such as “blending spaces, semantic bleaching, or double highlighting” (1998, p. 145). Thus, peripheral meanings expand across the conceptual regions emerging from the highlighted perceptual aspects. The different conceptual regions are not fully separated, as the boundaries between them are merged. The relation between senses belonging to different conceptual regions is measured in terms of the distance separating them.

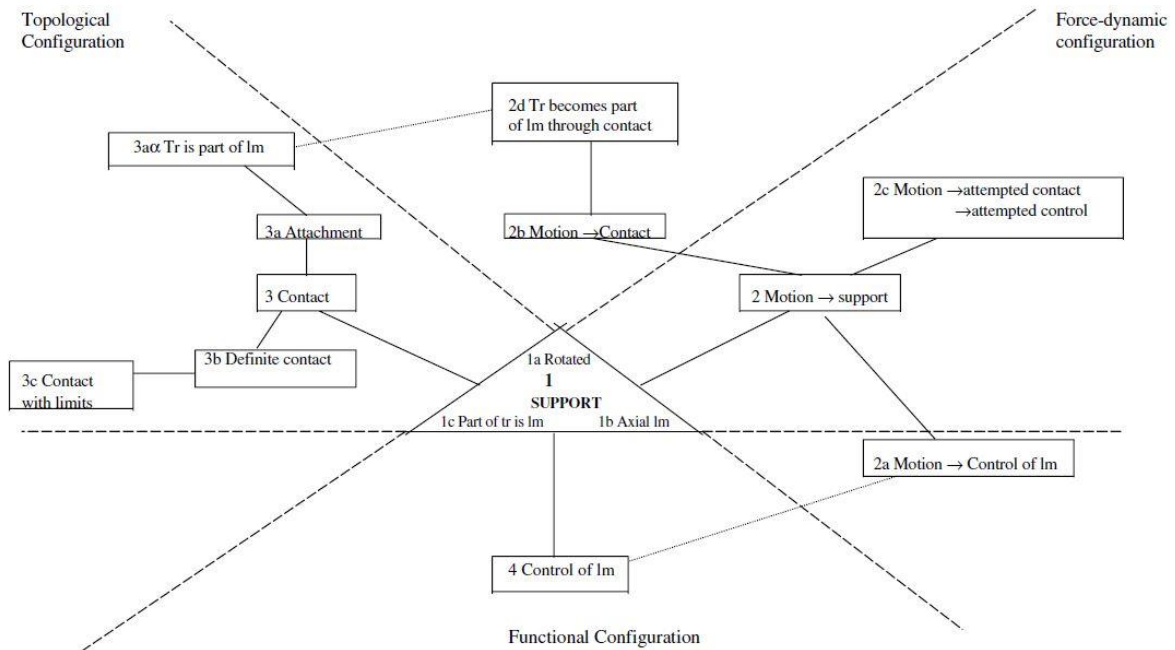


Figure 2. Radial category for on (Navarro i Ferrando, 1998, p. 219)

2.4.3. *At*: proto-concept of ENCOUNTER

The conceptual schema for *at* can be defined by the term ENCOUNTER (Table 3). Based on human bodily experience with this schema, *at* conjures the following elements. According to the force-dynamic configuration, the motion axis is defined by the functional front of the Tr and its orientation towards the Lm. The human canonical standing position determines that this axis is prototypically horizontal. As regards the topological configuration, the relationship between the Tr and the Lm is of contiguity, which does not necessarily imply contact. Finally, in relation to the functional dimension, there is certain intentionality of the Tr with respect to the Lm in order to use, manipulate, or affect it.

Topological axis	Dynamic axis	Functional axis
<p>Contiguity</p> <p>Contact is not necessary</p>	<p>Orientation</p> <p>Functional front of Tr towards Lm</p> <p>Direction</p> <p>Horizontal</p>	<p>Intentionality</p> <p>Tr uses/ manipulates/ affects Lm, face-to-face</p>

Table 3. Summary of the topological, dynamic and functional elements conjured by the proto-concept of ENCOUNTER (at)

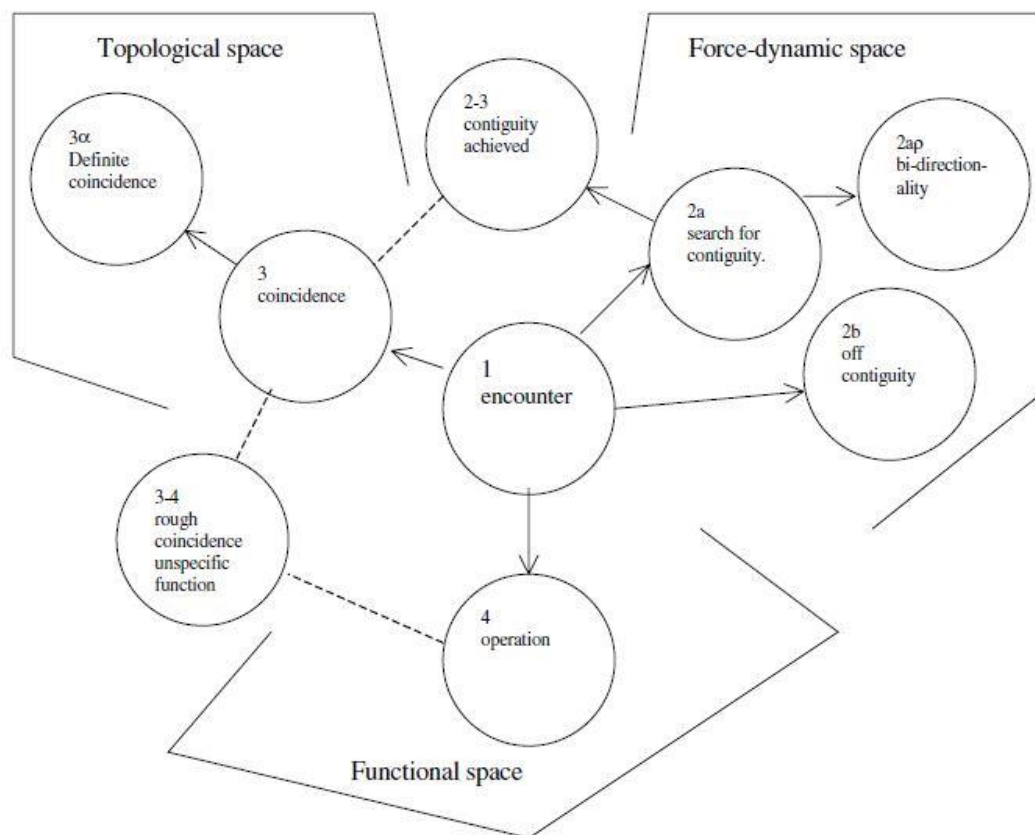


Figure 3. Radial category for at (Navarro i Ferrando, 1998, p. 174)

The polysemic structure of the preposition *at* is represented in the radial category corresponding to Figure 3. The primigenial sense, which is the first meaning that children learn, is situated at the centre of the network. Around the central sense, the peripheral meanings, acquired in later stages, extend through the topological, force-dynamic and functional regions. The peripheral senses corresponding to the first level of specialisation are generated by highlighting one of the perceptual aspects that give rise to the conceptual regions. Other mechanisms, such as blending spaces, semantic bleaching and double highlighting give rise to further specialisations. The conceptual regions across which the different specialised meanings do not present clear-cut borders, so the extension from one sense to another is gradual. Accordingly, the extent to which senses situated in different regions are related to each other is represented by the distance that separates them.

2.5. The time metaphor

Apart from the spatial sense, one of the first and most common usages of prepositions among Secondary School students is the temporal one. Accordingly, it seems appropriate to devote the present section to describe the ways in which this sense is generated. In order to do this, a summary of Navarro i Ferrando's (1998) account of the temporal uses of the prepositions *in*, *on*, *at* is provided as follows.

The time metaphor allows for the understanding of time in terms of physical space. In Western culture, time is usually represented by means of a metaphor as a path in which the future is ahead. This allows for two options: to remain statically or to move along the path. In the first case, standing still implies either facing other things coming, or having our back turned against them. In the second case, we move either facing our way, or backwards; in the case of Western culture, we move forward to meet the future.

The preposition *at* illustrates only the stative sense of the path metaphor. The coincidence sense of *at* is used to express periods of time that are understood as extensions with which another entity coincides. Therefore, *at* is generally used with very short periods or moments in time, since these ease the conceptualisation of complete coincidence. However, the relation of the Tr with the period of time is not only of coincidence, but also of use, as the time referred to is used for a purpose.

The coincidence sense, thus, generates expressions that indicate periods of time like parts of the day (*at night*, *at dawn*, *at dusk*, *at noon*, *at midnight*, *at day time*...) or other periods like

at present, at times, at---time, at Christmas, or period, date, interval moment, turn, etc. The time referred to might coincide with the present moment, what explains idioms like *at present* or *at the moment*. *At* is also used with lexical items with the meaning of events/periods that refer to the time of the event/period (e.g. *at birth, at death, at maturity, at infancy*).

A further metaphorical extension implies the use of expressions that indicate parts of periods of time. In these cases, the time designated is part of a larger period that may be expressed by nouns indicating a time period. These nouns equal the duration of the period (*start, outset, onset, conclusion, commencement...*). This sense also explains collocations like *at+stage, at + phase*.

The preposition *on* exploits both the stative and the dynamic senses of the path metaphor. When using *on*, the Tr holds a contact relation with the period of time, which may last as long as that period does. However, the dynamic aspect can also express that the Tr is in contact with successive parts of the period. In this way, *on* allows for the choice of locating the event *at* any point of the period referred to.

According to all this, *on* takes: dates, the days of the week, nouns referring to a day (*anniversary, Christmas, Easter*), periods of time, parts of the day, etc., as well as collocations of the type *on+V-ing*, in which the Tr may be located on the time path at several points. Furthermore, the meaning of *on* allows for contact of the Tr with the period of time (Lm), and particularly with the Lm's outer limits. This fact helps to develop the meaning of expressions like *on time, later on, from + [period of time] + on*.

The temporal sense of *in* expresses the coincidence of an entity with a time span that is included in a larger span. Therefore, the complements of *in* necessarily include at least three smaller periods: the period referred to with the Tr; a period before it; and another period after it.

In landmarks are periods the conception of which imply the three subperiods mentioned above. These can be *weeks, days, months, years, seasons, parts of the day, periods of human life (childhood), hours, minutes...* and periods in general. Idiomatic expressions like *in time, in due time, once in a while, in the meantime, in advance* are also generated in this way.

Last, a special usage of the time metaphor takes into account only two of the three possible periods included in the Lm. On these occasions, the period occupied by the Tr coincides with the end of the period denoted by the Lm (e.g. *You were back in ten minutes*).

3. METHODOLOGY

In order to test the initial hypothesis, namely that a group following the CL methodology will show greater improvement in their command of the prepositions *in*, *on*, *at* than another group learning them by means of a traditional collocational approach, an experiment has been designed in which both approaches are compared.

Two 4ESO groups participated in the experiment: 4ESO BK (control group) and 4ESO ACL (experimental group). The students in the two classrooms were asked to take a test before and after receiving instruction on the target prepositions, based on the two distinct approaches. The effectiveness of the two approaches has been assessed through a comparison between the results obtained by the students in the pre-test and in the post-test. In the present section, an account of the research process followed in this study is provided.

3.1. Objectives

The present study primarily attempts to examine whether the CL method based on a theoretical model developed by Navarro i Ferrando (1998) is more effective in teaching the prepositions *in*, *on*, *at* than a traditional approach based on collocations. For this purpose, the hypothesis that a group of students taught by means of a CL methodology will show greater improvement in their command of the target prepositions than another group taught following a collocational approach has been tested by means of an experiment.

3.2. Participants

During my *Practicum*, and in consonance with my supervisor's schedule, I have taught English to two 1ESO, two 2ESO and two 4ESO classrooms. However, not only the topic to be dealt with (i.e., prepositions), but also the theoretical reasoning involved in the explanatory sessions, required a certain command of the language as well as familiarity with abstract thought. For this reason, only the 4ESO groups participated in the experiment, since they were both assumed to have reached an intermediate English level and to be able to employ abstract thought.

Thus, the participants in the experiment comprised students belonging to the 4ESO KB and 4ESO ACL groups. The average student profile in both classrooms is that of a 16 to 18 year old individual who can speak Spanish and Catalan, apart from English and, in some cases,

other native languages. However, a number of differences can be observed between the two classroom contexts.

Regarding 4ESO KB, it is a group of 27 students, with a percentage of 44% male and 56% female members. 30% of the classroom is of foreign origin, including Romanian, Venezuelan, Algerian and Chinese nationalities. In this classroom, students from two different groups, B and K, have been put together in the English subject, and their overall language command is higher than the one in 4ESO ACL. In fact, most of the students in this classroom were part of high-performance English groups in previous academic years. In terms of motivation, the classroom shows a positive attitude towards learning, and most of them are planning on continuing their studies (*Bachiller* and University) in the following years.

In relation to 4ESO ACL, it is composed of 16 students, 50% male and 50% female, 44% of whom are foreigners coming from Romania, Venezuela, Algeria and Slovakia. Most of these students were part of low-performance English groups, and their overall language command is lower than the one in group 4ESO KB. In general, their motivation towards learning, and particularly towards learning English, is also lower than in the other group. This may be due in part to the fact that the members from the C group are expected to end their studies or take vocational training as soon as they can, so they feel that they will not need English in the future.

Taking into account these characteristics, a fair comparison between the two classroom contexts seemed difficult to achieve. Therefore, in order to compensate for the differences in level and motivation, the experimental methodology was used in the less advantaged group, 4ESO ACL, whereas 4ESO BK became the control group. Thus, it was hypothesised in the present study that 4ESO ACL would show greater improvement on their knowledge of the prepositions *in*, *on*, *at* after receiving instruction in the experimental methodology. On the contrary, 4ESO BK, the control group, would show a lower degree of improvement after being taught the target prepositions following a collocational approach.

3.3. Materials

Two types of materials were used in this study. On the one hand, the teaching materials used as support for the theoretical classes; on the other hand, the pre-tests and post-tests, or questionnaires, used at the beginning and at the end of the research process.

3.3.1. Questionnaires

Two questionnaire models were created for this experiment, namely A (Appendix 1 and Appendix 3) and B (Appendix 2 and Appendix 4). These were handed in to students in a way that allowed for no individual sitting next to another to have the same model. Both models were used as pre-test and post-test, so students who had used one model as pre-test used the other one as post-test.

The handouts were three pages long, and were printed double-sided in black and white. At the top of each handout, a table was placed in which students had to write their name, the group they belonged to and the date. Next to this, a letter indicated whether the handout corresponded to model A or model B.

As regards content, the questionnaires were carefully designed to be equal in terms of difficulty. Since spatial and temporal meanings of prepositions are usually taught together, the lessons and questionnaires used in this experiment included both usages, so as to avoid disrupting this notion. However, the main focus of this study concerned the acquisition of spatial meanings, so the temporal usages were ignored when assessing the results. Taking all this into account, each handout consisted of four tasks related to the usages of the prepositions *in*, *on*, *at*:

- *Task 1* was a sentence-generation exercise in which students were asked to write three sentences expressing spatial meanings and three sentences expressing temporal meanings of the target prepositions. This task was designed as a warm-up for learners to start thinking about the contexts in which they know the target prepositions are used. For that reason, it was placed in the first page, so as to prevent learners from being influenced by the prepositional contexts displayed in the rest of exercises.
- *Task 2* was a fill-in-the-gap activity that required the students to choose the most correct preposition to complete a set of 30 sentences. Sixteen of these exploited the temporal senses and fourteen the spatial senses of the target prepositions. The sentences were all extracted from *Units 121 to 125* in Murphy's *English Grammar in Use* (2012, pp. 242-252), which are devoted to the prepositions *in*, *on*, *at*. This was made to ensure the appropriateness of the exercise to the students' English level, which at the 4ESO stage is assumed to be intermediate.
- *Task 3* was also a fill-in-the-gap activity, but on this occasion the sentences lacked both the preposition and its complement. The complements to be used in the different gaps were scrambled on a table, and students had to select the most suitable one for

each sentence. Following the rationale behind *Task 2*, the six sentences used in this exercise were also extracted from Murphy's (2012) units devoted to prepositions, and included a proportion of two temporal and four spatial usages.

- *Task 4* consisted of 3 sub-sections aimed at making students reflect upon the answers they had emitted in the previous exercises, and the mechanisms they had used to select them. The first question enquired into whether students used any rules in their choice of prepositions. The second question considered other mechanisms by which students would choose a preposition over the others. In the following question, learners were asked about the difficulty of the exercises and prepositions they had been dealing with. Apart from these, an additional question asking students whether they considered useful what they had learnt was included in the post-test. Finally, a section where students could add any comments if they wanted was placed at the end of the questionnaires.

In relation to the main research question posed in this study, the assessment of the results has only taken into account the data collected from *Task 2* and *Task 3* in the questionnaires. However, the information gathered from the first and last question has been useful when weighing the results obtained in the experiment.

3.3.2. Teaching materials

The design of the theoretical and practical materials used in the two explanatory lessons in this study followed a similar structure in the two groups where these were implemented. Thus, for the theoretical explanations, four *Powerpoint* presentations were prepared and projected on a screen by means of a computer and a projector. Two of them were devoted to the spatial and temporal meanings of the target prepositions from a CL perspective, and the other two from a collocational one.

It must be pointed out here that the decision to include the temporal meaning of the prepositions *in*, *on*, *at* was taken so as to comply with the way in which it is usually taught, that is, together with the spatial senses. Despite this, only the usages related to the latter were considered in the assessment of the experiment's results.

With respect to the control group, 4ESO BK, the target prepositions were taught from a collocational perspective. For this, and following Song's (2013) example of a traditional approach, the different collocational contexts in which the prepositions can be used appeared

in the *Powerpoints* arranged in terms of a definition elicited by the particular utterances shown on screen. In other words, collocations such as the ones appearing in the sentences “*The kids are playing in the street*” or “*I read about the event in the newspaper*” were presented as examples of *in* meaning “*at a point within an area or surface*”.

The arrangement of prepositional contexts in terms of meaning was made in order to make it easier for students to memorise the different collocations with which the target prepositions can be used. This procedure was used both for the spatial and the temporal meanings of *in*, *on*, *at*. Apart from this, an introduction to the concept of preposition was used at the beginning of the first lesson (Appendix 5), and a review of the spatial usages preceded the teaching of the temporal ones in the second session (Appendix 6).

Concerning the experimental group, 4ESO ACL, the *Powerpoint* (Appendix 7) used in the first lesson began with an introduction to CL and the main concepts that students needed to understand in this approach. Thus, definitions of trajector, landmark and image schema, as well as an explanation of the topological, dynamic and functional meaning dimensions in prepositions were provided. After this, students were presented a simplified version of the proto-concepts developed by Navarro i Ferrando (1998) to explain the meanings of *in*, *on*, *at*.

In the second session (Appendix 8), all these notions were revised, and the main ideas to be kept about the proto-concepts for the target prepositions were highlighted. Then, students were introduced to the time metaphor, which was considered necessary for the understanding of the temporal meanings of prepositions from a CL perspective. After this, the temporal usages of *in*, *on*, *at* were explained following Navarro i Ferrando’s (1998) descriptions of the same prepositions. However, slides summarising the temporal contexts in which these prepositions are used were also included. This is due to the difficulty involved in explaining the temporal usages of these prepositions from a CL approach, since in many cases these are assumed to be collocational. Furthermore, it was considered that this decision would not affect the results of the experiment, since the temporal uses would not be taken into account in the analysis.

The theoretical explanations described above included some interactive examples to ensure the understanding of the points being referred to in the control and the experimental group. In addition, these were followed in both cases by the same series of practical exercises, aimed at allowing students to implement what they had just learnt. These exercises were taken from Song (2013), where the author also compares a CL with a traditional approach to teaching the prepositions *in*, *on*, *at*. In the case of the spatial usages, the activities included a fill-in-

the-gap and a multiple choice exercise (Appendix 9). For the temporal meanings, a multiple choice activity and a matching exercise were included (Appendix 10).

3.4. Procedure

In the present study, an experiment has been designed in order to test the effectiveness of two different teaching methodologies for prepositions: a CL-based approach, and a traditional collocational approach. This experiment has been carried out as follows:

In the first session, students from 4ESO BK (control group) and 4ESO ACL (experimental group) were asked to fill in a questionnaire as a pre-test (see Appendix 1 and Appendix 2). Two versions of the questionnaire, namely A and B, were distributed around the classrooms so that no students sitting contiguously had the same model, in order to avoid cheating.

Although the test was designed to last over 30 minutes, students were given the whole session (55 minutes) to complete their handout. First of all, the students were told that this test would not have any influence on their English mark, so they did not need to worry about the result or about their grammar. After this, the instructions were read aloud and learners were encouraged to ask for any doubt or unknown vocabulary they found. All these measures were taken so as to make sure that students would focus on the main point of the experiment: the use of the prepositions *in*, *on*, *at*.

After the pre-test and before the post-test, two 55-minute sessions were devoted to teaching the prepositions *in*, *on*, *at* in both 4ESO classrooms. In these, two different methodologies were used: a CL approach in the experimental group (4ESO ACL), and a traditional approach in the control group (4ESO BK). In order to ensure the same learning opportunities, both methodologies were applied under similar conditions.

The second session took place three days after the first session in 4ESO BK and a day later in 4ESO ACL. This lesson was devoted to introducing prepositions, which was subsequently followed by instruction on the spatial usages of *in*, *on*, *at* (see Appendix 5 and Appendix 7). Once the explanation was finished, the students in both classrooms were given the same exercises to be done in groups (see Appendix 9).

The third session was implemented a day later, following the same structure as the previous one. Its first part was devoted to reviewing the spatial usages of the target prepositions learnt in the previous session, and to teaching the temporal ones (see Appendix 6 and Appendix 8). After this, some exercises were used to apply the theory just learnt (see Appendix 10).

As mentioned above, the theoretical explanations included both the temporal and spatial usages of the target prepositions, with the purpose of being consistent with the way in which *in*, *on*, *at* are usually taught. Nevertheless, the temporal usages were ignored in the assessment of the experiment's results, as these go beyond the scope of this study.

The day after the fourth session, once classes were finished, all the participants received an e-mail sent by their English teacher (my supervisor). This e-mail contained the *Powerpoint* presentations and practical exercises used in the explanatory lessons. Students were asked to revise these materials for the next session, although they were not told that they were going to do the experiment's post-test, scheduled for the following day.

In the post-test session, the handouts were the same as in the pre-test, but students who had previously taken model A, now received model B, and vice-versa. As in the first phase of the experiment, the students were given a 55-minute session to complete the test, and were provided with all the means and information necessary for them to exclusively focus on the target prepositions. The only difference between the pre-test and the post-test was an additional question included in the latter, which enquired about the perceived usefulness of what students had learnt (see Appendix 3 and Appendix 4).

In order to test the main hypothesis in this study, a comparison was made between the achievements obtained by students in both groups in the initial and final questionnaires. However, as some members from the two groups had missed either the pre-test or the post-test, the number of valid samples was lower than the number of people in each classroom. Thus, in 4ESO BK –the control group- the final amount was 21, while in 4ESO ACL –the experimental group- only 11 samples were valid.

4. RESULTS

The results of the experiment are presented in the tables and graphics below. These figures have been created in order to compare two dimensions of the data collected in the study. One dimension is the number and quality of learners' answers in the pre-test and post-test; the other, the students' overall performance in the initial and final questionnaires.

On the one hand, in Table 4 (control group) and Table 5 (experimental group) the number of correct (✓), incorrect (X) and blank (Ø) answers provided to *Task 2* are displayed in two columns. The left column shows the answers corresponding to the pre-test, while the ones relating to the post-test are situated on the right. Each of the table's rows represents the answers provided by a student from the control or the experimental group, as it is indicated in the first column.

At the bottom of the tables, the *Total* amount of correct, incorrect and blank answers summed up in each classroom is pointed out. Below these quantities, the numbers labelled as *Maximum* correspond to the sum of all the *Task 2* items from all questionnaires in the two groups. Since the control group (4ESO BK) consists of 20 students, and *Task 2* contains 14 items in every questionnaire, the total number of *Task 2* items from all the questionnaires in 4ESO BK is 280. In contrast, only 11 samples have been collected from the experimental group (4ESO ACL), so the total amount of *Task 2* items in the latter is 154. These quantities also correspond to the highest possible number of correct, incorrect or blank answers attainable by the sum of all the members in both groups, respectively.

Table 6 and Table 7 follow the same rationale as the previous ones, but the results referred to on this occasion are related to *Task 3*. Again, the responses obtained from the students in the two groups are classified into correct, incorrect or blank. Taking into account that *Task 3* contains only 4 items, the maximum possible number of correct, incorrect or blank answers attainable by the control group (4ESO BK) is 80, whereas in the experimental group (4ESO ACL) it is 44.

Control group 4ESOBK	Task 2					
	Pre-test			Post-test		
	✓	X	Ø	✓	X	Ø
S1	7	5	2	7	7	0
S2	5	7	2	4	10	0
S3	6	8	0	10	4	0
S4	9	5	0	4	10	0
S5	7	7	0	8	6	0
S6	7	6	1	9	5	0
S7	9	5	0	7	7	0
S8	9	5	0	7	7	0
S9	7	7	0	9	5	0
S10	8	6	0	8	6	0
S11	5	9	0	8	6	0
S12	5	8	1	6	8	0
S13	6	8	0	6	8	0
S14	9	5	0	2	12	0
S15	7	7	0	7	7	0
S16	4	10	0	5	9	0
S17	7	7	0	7	7	0
S18	5	9	0	7	7	0
S19	5	9	0	6	8	0
S20	7	7	0	6	8	0
Total	134	140	6	133	147	0
Maximum	280			280		

Table 4. Number of correct, incorrect and blank answers to Task 2 in the pre-test and the post-test (control group)

Experimental group 4ESO ACL	Task 2					
	Pre-test			Post-test		
	✓	X	Ø	✓	Ø	✓
S1	6	8	0	6	8	0
S2	8	6	0	2	12	0
S3	3	11	0	5	9	0
S4	6	7	1	7	6	1
S5	9	5	0	5	9	0
S6	5	8	1	5	9	0
S7	4	10	0	10	4	0
S8	8	6	0	6	8	0
S9	7	7	0	6	8	0
S10	4	10	0	5	9	0
S11	5	9	0	6	8	0
Total	65	87	2	63	90	1
Maximum	154			154		

Table 5. Number of correct, incorrect and blank answers to Task 2 in the pre-test and the post-test (experimental group)

Control group 4ESOBK	<i>Task 3</i>					
	Pre-test			Post-test		
	✓	X	Ø	✓	X	Ø
S1	1	3	0	1	3	0
S2	1	3	0	1	3	0
S3	2	2	0	3	1	0
S4	2	2	0	2	2	0
S5	2	2	0	0	4	0
S6	2	2	0	1	3	0
S7	2	2	0	0	4	0
S8	1	3	0	1	3	0
S9	2	2	0	1	3	0
S10	2	2	0	2	2	0
S11	0	4	0	3	1	0
S12	2	2	0	1	3	0
S13	1	3	0	2	2	0
S14	2	2	0	2	2	0
S15	1	3	0	1	3	0
S16	3	1	0	0	4	0
S17	0	1	3	1	3	0
S18	0	4	0	4	0	0
S19	3	1	0	2	2	0
S20	0	4	0	1	3	0
Total	29	48	3	29	51	0
Maximum	80			80		

Table 6. Number of correct, incorrect and blank answers to *Task 3* in the pre-test and the post-test (control group)

Experimental group 4ESO ACL	<i>Task 3</i>					
	Pre-test			Post-test		
	X	Ø	Ø	✓	X	Ø
S1	1	3	0	1	3	0
S2	1	3	0	2	2	0
S3	0	4	0	2	2	0
S4	2	1	1	1	3	0
S5	1	3	0	2	2	0
S6	2	2	0	0	4	0
S7	2	2	0	3	1	0
S8	0	0	4	0	0	4
S9	2	2	0	1	3	0
S10	0	0	4	3	1	0
S11	1	3	0	1	3	0
Total	12	23	9	16	24	4
Maximum	44			44		

Table 7. Number of correct, incorrect and blank answers to *Task 3* in the pre-test and the post-test (experimental group)

The data gathered from *Task 2* and *Task 3* in 4ESO BK (control group) and in 4ESO ACL (experimental group) are considered together in Table 8 and Table 9. These tables allow for an integral overview of the results achieved in the pre-test and the post-test in the control and experimental groups. In these, the number of correct, incorrect and blank answers to *Task 2 + Task 3* in the pre-test and the post-test have been summed up both at an individual level (each row) as well as at the level of the classroom as a whole (*Total*).

Again, the tables' last rows (*Maximum*) indicate the total number of items from *Task 2* and *Task 3* from all questionnaires in the two groups. As in the tables above, this quantity corresponds to the highest possible amount of correct, incorrect or blank answers that can be scored by the whole classrooms according to the number of students they have.

Control group 4ESOBK	<i>Task 2 + Task 3</i>					
	Pre-test			Post-test		
	✓	X	Ø	✓	X	Ø
S1	8	8	2	8	10	0
S2	6	10	2	5	13	0
S3	8	10	0	13	5	0
S4	11	7	0	6	12	0
S5	9	9	0	8	10	0
S6	9	8	1	10	8	0
S7	11	7	0	7	11	0
S8	10	8	0	8	10	0
S9	9	9	0	10	8	0
S10	10	8	0	10	8	0
S11	5	13	0	11	7	0
S12	7	10	1	7	11	0
S13	7	11	0	8	10	0
S14	11	7	0	4	14	0
S15	8	10	0	8	10	0
S16	7	11	0	5	13	0
S17	7	8	3	8	10	0
S18	5	13	0	11	7	0
S19	8	10	0	8	10	0
S20	7	11	0	7	11	0
Total	163	188	6	129	147	0
Maximum	360			360		

Table 8. Number of correct, incorrect and blank answers to *Task 2 + Task 3* in the pre-test and the post-test (control group)

Experimental group 4ESO ACL	<i>Task 2 + Task 3</i>					
	Pre-test			Post-test		
	✓	X	Ø	✓	X	Ø
S1	7	11	0	7	11	0
S2	9	9	0	4	14	0
S3	3	15	0	7	11	0
S4	8	8	2	8	9	1
S5	10	8	0	7	11	0
S6	7	10	1	5	13	0
S7	6	12	0	13	5	0
S8	8	6	4	6	8	4
S9	9	9	0	7	11	0
S10	4	10	4	8	10	0
S11	6	12	0	7	11	0
Total	77	110	11	79	114	5
Maximum	198			198		

Table 9. Number of correct, incorrect and blank answers to *Task 2 + Task 3* in the pre-test and the post-test (experimental group)

In order to facilitate the comparison between the results from the pre-test and the post-test in the two groups, the quantities displayed on Table 4 to Table 6 are transformed into percentages in Table 10 and Table 11. Thus, the number of correct, incorrect and blank answers to *Task 2*, *Task 3*, and to the combination of both tasks (*Task 2 + Task 3*), has been divided by their respective number of maximum possible answers.

In the last row in Table 10 and Table 11, the difference between the percentages corresponding to the pre-test and the post-test (*Variation*) are illustrated. A negative *Variation* indicates that the number of items corresponding to an answer type (for instance, correct answers) in the post-test is lower than the number of the same answer type in the pre-test, and vice-versa.

Control group 4ESO BK	<i>Task 2</i>			<i>Task 3</i>			<i>Task 2 + Task 3</i>		
	✓	X	Ø	✓	X	Ø	✓	X	Ø
Pre-test	47.9 %	50%	2.1%	36.25%	60 %	3.75%	45.3%	52.2%	2.5%
Post-test	47.5 %	52.5%	0%	36.25%	63.75%	0%	45%	55%	0%
Variation	-0.4	+2.5%	-2.1 %	0%	+3.75%	-3.75%	-0.2%	+2.8%	-2.5%

Table 10. Percentages of correct, incorrect and blank answers to *Task 2*, *Task 3*, and *Task 2 + Task 3* in the pre-test and the post-test, and their variation between the two tests (control group)

Experimental group 4ESO ACL	<i>Task 2</i>			<i>Task 3</i>			<i>Task 2 + Task 3</i>		
	✓	X	Ø	✓	X	Ø	✓	X	Ø
Pre-test	42.2%	56.5%	1.3%	27.3%	52.3%	20.4%	38.9%	55.6%	5.5%
Post-test	40.9%	58.4%	0.7%	36.4%	54.5%	9.1%	39.9%	57.5%	2.6%
Variation	-1.3%	+1.9%	-0.6 %	+9.1%	+2.2%	-11.3%	+1%	+1.9%	-2.9%

Table 11. Percentages of correct, incorrect and blank answers to *Task 2*, *Task 3*, and *Task 2 + Task 3* in the pre-test and the post-test, and their variation between the two tests (experimental group)

On the other hand, a comparison has also been made in relation to the number of students in each classroom who have achieved the same, better or worse results in the pre-test and the post-test. These are illustrated in the graphics that follow.

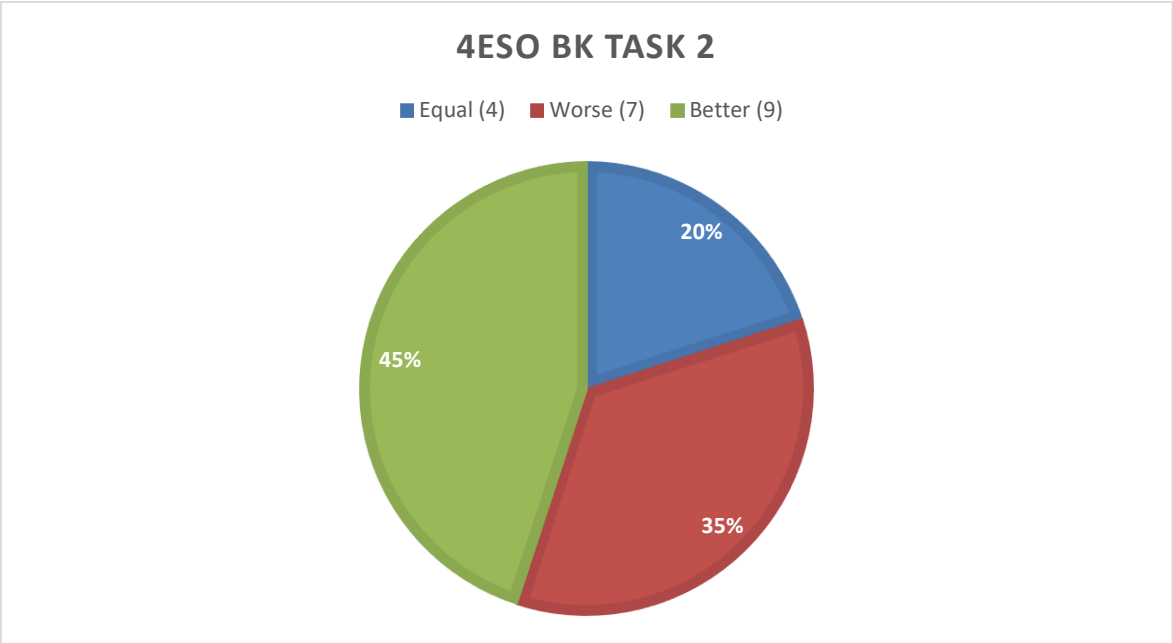


Figure 4. Number and percentage of students who have improved, worsened or obtained equal results in *Task 2* between the pre-test and the post-test (control group)

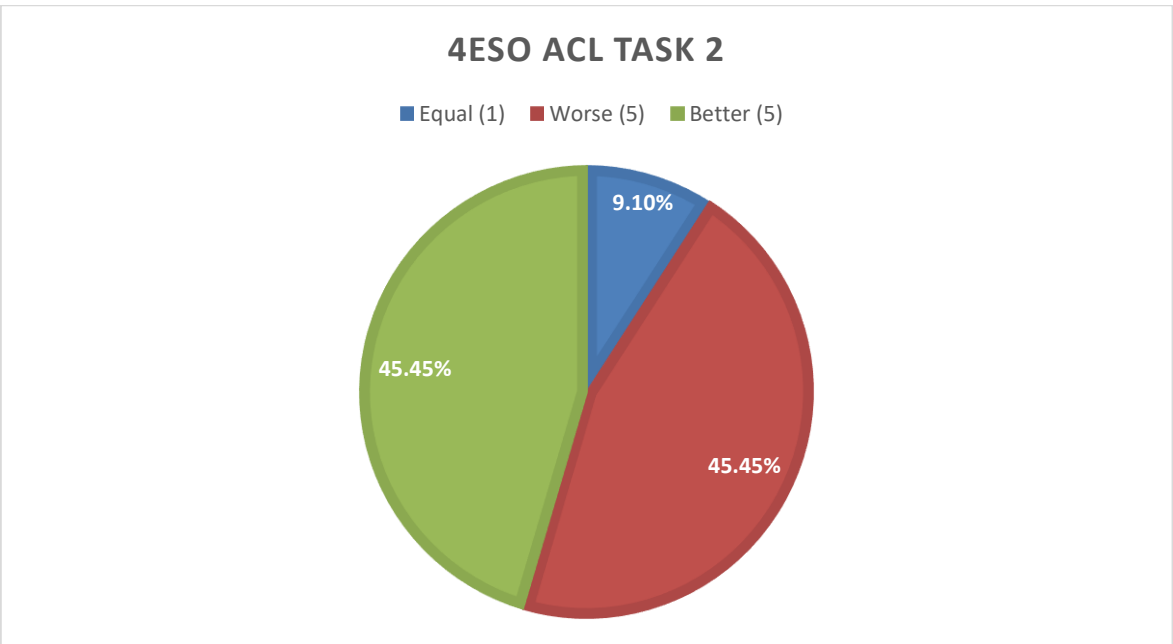


Figure 5. Number and percentage of students who have improved, worsened or obtained equal results in *Task 2* between the pre-test and the post-test (experimental group)

Figure 4 and Figure 5 represent the difference between students' performance in *Task 2* in the pre-test and the post-test. In the graphics, the proportion of students who have achieved the same, worse or better results is represented as a number and as a percentage.

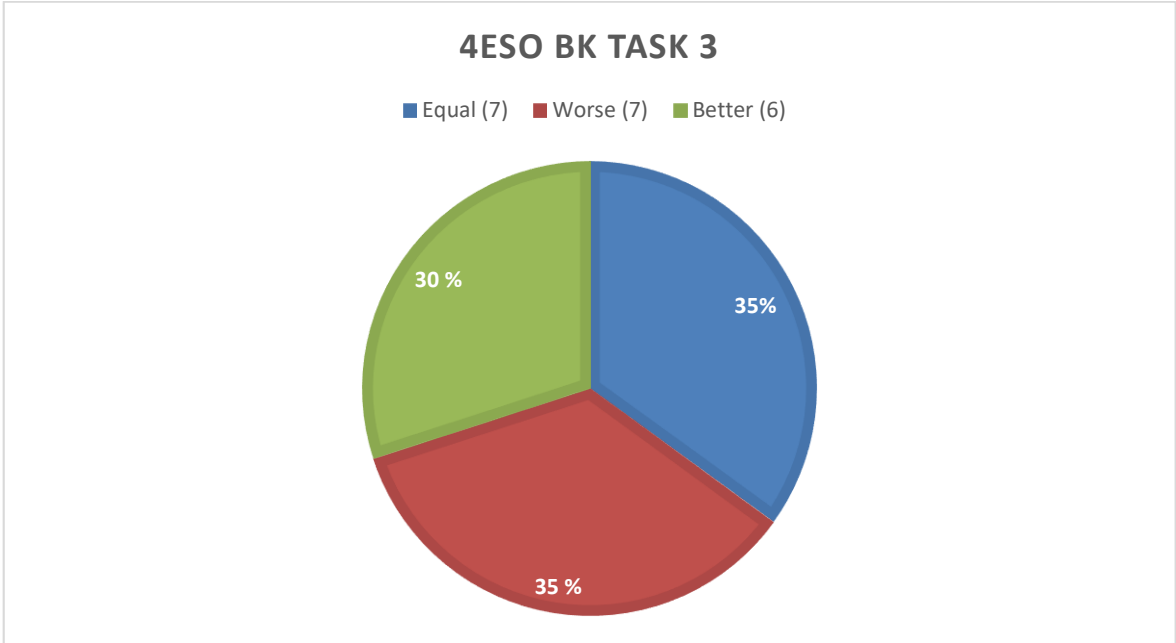


Figure 6. Number and percentage of students who have improved, worsened or obtained equal results in *Task 3* between the pre-test and the post-test (control group)

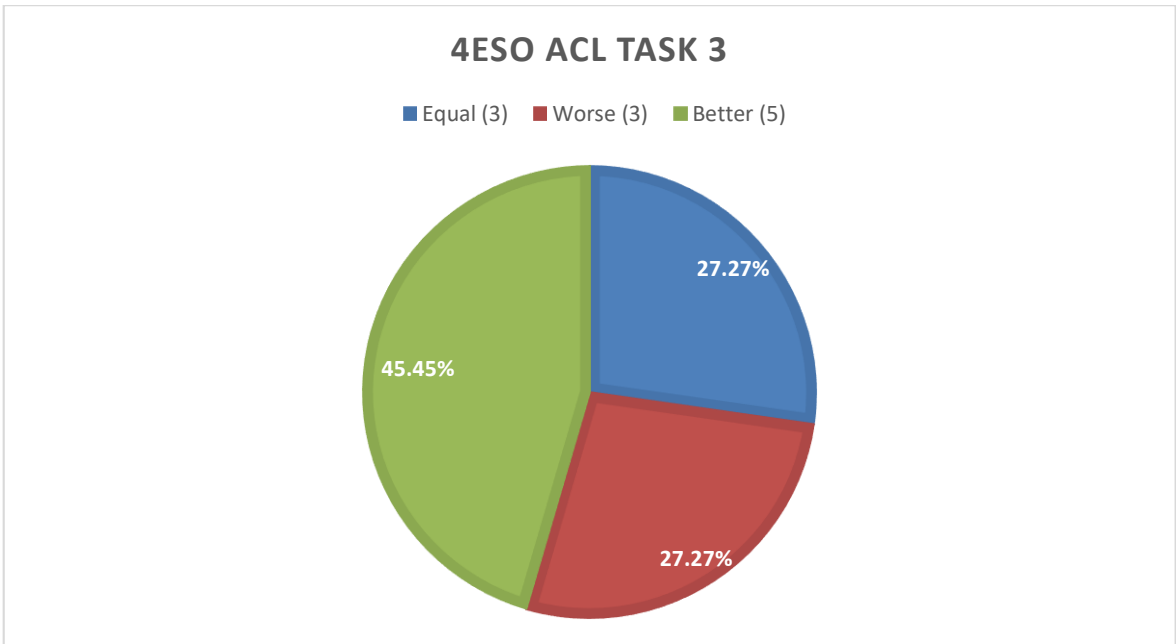


Figure 7. Number and percentage of students who have improved, worsened or obtained equal results in *Task 3* between the pre-test and the post-test (experimental group)

The data gathered in relation to the students' performance in *Task 3* are represented in Figure 6 and Figure 7. As in the previous graphics, the number of students belonging to the control group (4ESO BK) is bigger than the number in the experimental group (4ESO ACL), because more samples have been obtained from the former than from the latter.

Last, in Figure 8 and Figure 9 the students' performance in tasks 2 and 3 are gathered together. Thus, Figure 8 represents the proportion of students in the control group (4ESO BK) who have achieved equal, worse or better results in the questionnaires as a whole, whereas Figure 9 makes reference to the same information as corresponding to the experimental group (4ESO ACL).

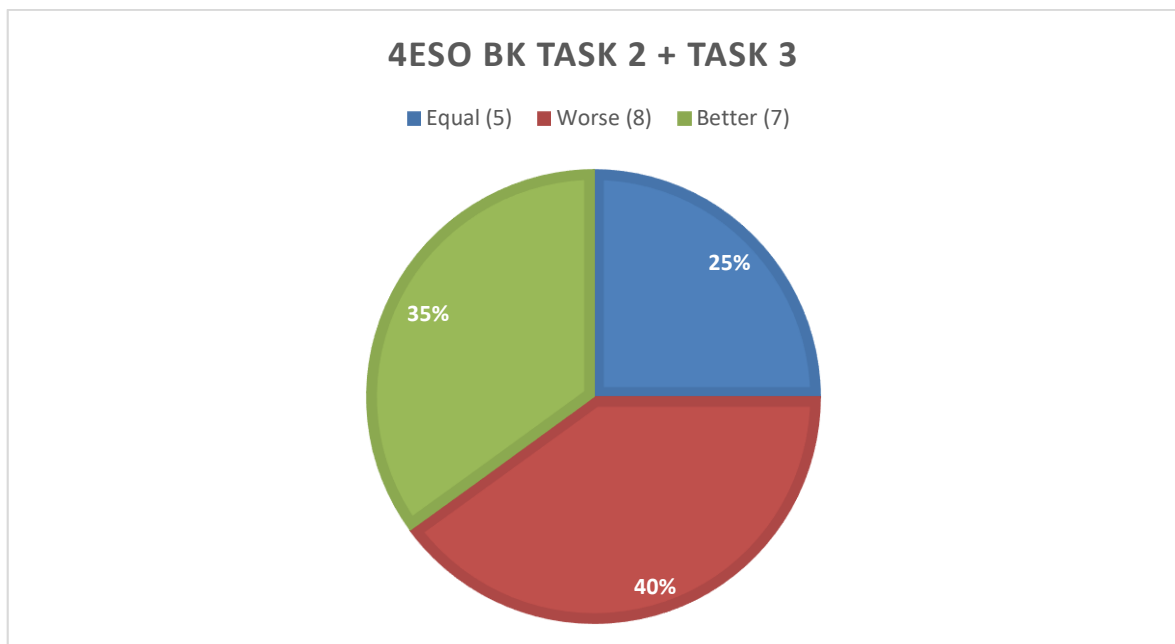


Figure 8. Number and percentage of students who have improved, worsened or obtained equal results in *Task 2 + Task 3* between the pre-test and the post-test (control group)

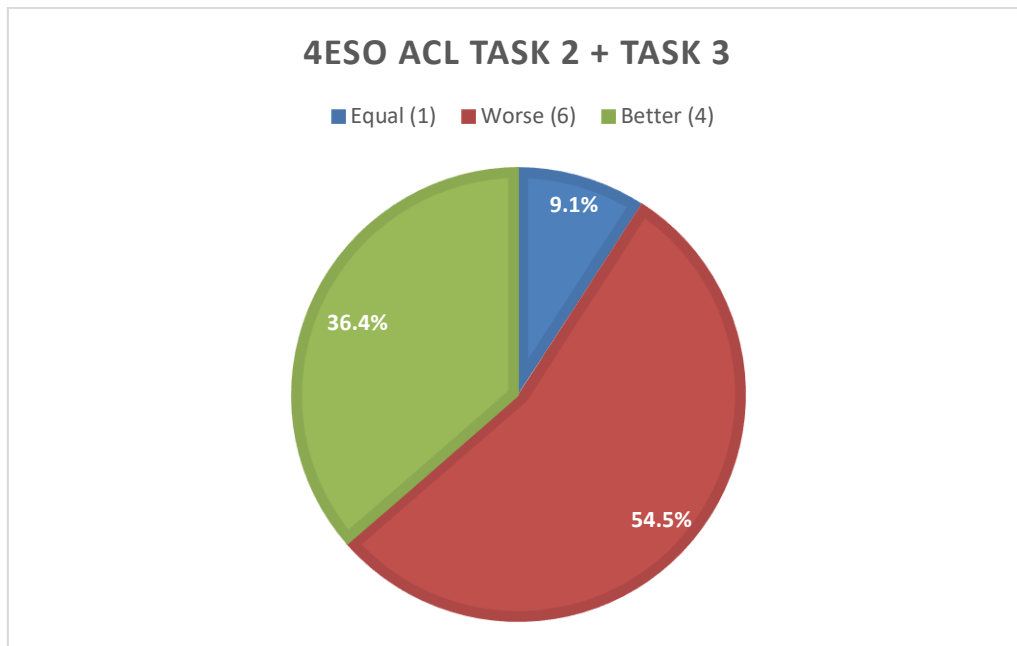


Figure 9. Number and percentage of students who have improved, worsened or obtained equal results in *Task 2 + Task 3* between the pre-test and the post-test (experimental group)

5. DISCUSSION

5.1. Answers

With regard to the results obtained from *Task 2*, the proportion of correct answers provided by students in the control group both in the pre-test (47.9%) and the post-test (47.5%) is higher than the ones corresponding to the experimental group (42.2% and 40.9%, respectively). This fact does not come as a surprise, since the students belonging to the former class were expected to show greater proficiency than their counterparts, according to their background and motivation.

Still, these numbers are not compliant to our initial hypothesis. In fact, none of the groups have shown any improvement at all, but rather both have obtained worse results in the post-test. The experimental group are the ones that have fared worse in this sense. Despite their number of errors having increased less than in the control group, their decrease in the amount of correct answers is much sharper. The same happens with the answers that have been left blank, although these have not been given much weight in this Discussion due to the difficulty of determining whether the students did not answer them because of their lack of knowledge, because they did not understand the context in which the preposition appeared, or just because they were tired of thinking.

In *Task 3*, the control group have achieved an equal percentage of correct answers in the initial and final questionnaires. However, their proportion of incorrect answers has increased a 3.75%. In contrast, the experimental group, who obtained a lower percentage in the pre-test, have achieved slightly better results than 4ESO BK (control group) in the post-test. Thus, even if 4ESO ACL (experimental group) have experienced a 2.2% increase in their number of incorrect answers, the variation in their proportion of correct answers (+9.1%) is much higher than that. Therefore, the experimental group have not only attained a positive outcome after the instruction, but also they have overcome the results achieved by the control group, who have not shown any improvement in *Task 3*.

Considering the results obtained from *Task 2* + *Task 3* together, these do not seem very positive, as both groups have reached an overall higher proportion of wrong answers than of correct ones. Despite that, the outcome of the experiment is more positive in the experimental group, in that their number of correct answers has seen a greater increase than in 4ESO BK (control group). In consonance with that, the rise in the number of incorrect answers has been smaller in the experimental group as well.

In summary, in *Task 2* not only the two classes have shown negative results in the post-test, but also the experimental group have performed worse than the control group. In *Task 3*, students have again done worse in the post-test, but this time the experimental group have started a more positive development than 4ESO BK (control group). Finally, the differences between the percentages of correct and incorrect answers in *Task 2 + Task 3* achieved by the two groups in the initial and the final questionnaires suggest a more positive outcome in the experimental group. Thus, in relation to our initial hypothesis, the results from *Task 2* seem to contradict it, whereas the results from *Task 3* and *Task 2+Task 3* considered together comply with it.

These results seem to contradict each other; however, there is a factor that may explain the experimental group's unsuccessful performance in *Task 2*: motivation. In the description of the participants, it has been pointed out that students in the experimental group are characterised by an overall lack of motivation. During the research process, students in the control group have not been openly enthusiastic neither about the questionnaires nor the theoretical explanations. However, their behaviour and attitude towards learning could be described as a fairly positive. In contrast, the overall attitude in the experimental group has been negative, as several students in 4ESO ACL showed indifference, or even open rejection, towards the questionnaires and the theoretical classes. This contrast between the two groups can be seen, for example, in the fact that a much higher percentage of the experimental group has left questions unanswered (i.e. blank) in the questionnaires, even in the post-test.

Extrapolating these attitudes to the scope of the activities, *Task 2* is much longer than *Task 3*. Therefore, so students may have found that completing the 30 items in the former is more boring than completing the only 6 in the latter. In addition, *Task 2* constitutes a classic example of fill-in-the-gap activity in which the sentences are mechanically answered with one preposition. In contrast, *Task 3* involves the necessity of combining the prepositions with another element. This fact might have made the students consider the completion of *Task 3* as more appealing than the mechanical selection of a preposition in *Task 2*. In other words, it could be argued that the students' negative attitude towards the questionnaires, and particularly towards *Task 2*, has had a negative influence on the experiment's results, most notably in the experimental group. In this sense, it could be assumed that participants in the experimental group have paid less attention, and therefore have provided a greater number of wrong answers to the task that engaged their motivation the least.

5.2. Students

The outcomes of the experiment can also be assessed in terms of the percentage of students from the two groups who have improved, worsened, or obtained equal results in the pre-test and the post-test.

Concerning *Task 2*, the proportion of students who have improved in the experimental group (45.45%) is slightly higher than in the control group (45%). However, an equal fraction of students have obtained negative results in the experimental group (45.45%), while in the control group the difference between the students who have improved and worsened is more obvious (45% and 35%, respectively).

Regarding student performance in *Task 3* in the two groups, the class in which more people have improved is the experimental group. In fact, not only the proportion of successful students in this group is greater than of those who have not succeeded, but also than their counterparts in the control group. In addition, in the control group there is a greater fraction of students who have worsened (35%) than of students who have improved (30%).

Finally, the data gathered from *Task 2 + Task 3* together indicate that the proportion of students who have improved in the experimental group (36.4%) is higher than in the control group (35%). However, the number of worse performances in the experimental group is also greater nonetheless (54.5%), as in the control group there is a less sharp proportion of students who have done worse between the pre-test and the post-test (40%).

Summarising, the data gathered in relation to the number of students who have achieved better, worse or equal results between the pre-test and the post-test in each group agree with our initial hypothesis, that is, that the group following a CL approach would improve more their command of the prepositions *in*, *on*, *at* than the group following a traditional approach. Indeed, in *Task 2*, *Task 3* and *Task 2 + Task 3*, the percentage of students who have improved their results between the pre-test and the post-test is higher in the experimental group. These results would also be in line with the ones obtained by Song (2013) in his experimental comparison between a CL and a traditional approach to teaching the prepositions *in*, *on*, *at*.

5.3. Conditions of the experiment: drawbacks

Despite the fact that the results obtained in the study agree with our initial hypothesis, it must be also pointed out that both the experimental and the control group present an important fraction of students who have not achieved better results in the pre-test than in the post-test, and that the percentages of students who have worsened are greater in the experimental

group. In relation to this situation, a series of factors may have had an influence on the students' performance between the initial and final questionnaires. These are motivation, confidence, class attendance, timing, and the teaching materials.

As regards motivation, its effects, which have been most notable in the experimental group's performance, have already been described in the discussion above. Thus, it has been suggested that the experimental group's lack of motivation has lead the students in this class to demonstrate a negative attitude towards learning, which has been translated into a worse performance when completing an activity the nature of which might not engage their attention (*Task 2*).

Another way in which motivation might have affected students' performance is related to its connection with their confidence. It could be argued that the existence of a more positive attitude towards the experiment in the control group than in the experimental group may be explained in terms of students' confidence. Since most of the students in the control group have a good English level, they feel confident about it. This confidence might, in turn, generate motivation towards learning, seen as a pleasant experience. However, the situation in the experimental group is the opposite, as they think of themselves as having a poor command on the English language, which is translated into a more negative attitude towards learning.

In fact, the confidence of participants in the experimental group seemed to be boosted when in the theoretical sessions the students felt capable of completing most of the activities successfully. Still, they left a relatively high proportion of unanswered exercises in the post-test. This could indicate that the students' insecurities, and therefore their lack of motivation, increased in the final questionnaire, which students may consider as more challenging than the activities completed in the theoretical sessions.

Class attendance is another factor that might have had a particularly negative influence on the experimental group's results. Indeed, one student missed the first theoretical session, and four other students were on a school trip during the second lesson. This fact can be considered to have affected negatively both, these students' results, as well as the outcomes of the whole class. On the one hand, the students who missed the lessons can be expected to have achieved a poorer understanding of the theoretical approach they were explained, and thus on the use of the target prepositions. On the other hand, the lack of understanding can also have affected the students' confidence, and therefore have derived into worse results affecting both, their individual performance as well as their performance at the class level.

The lack of sufficient time to review the theory dealt with in the two groups might have influenced the students' performance negatively as well. Due to time constraints related to the duration of the *Practicum*, only four sessions with each group were available to perform the experiment. Also, in order to assess the two groups under the same conditions, students were asked to review the materials only one day before the post-test took place, which might not have been enough for them. In addition, the experiment coincided with a period in which students need to devote most of their time preparing exams for the rest of subjects, thus leaving other matters unattended.

Finally, the way in which the materials have been presented to students can also be considered to have affected the results of the experiment. In the experimental group, the theoretical explanations related to the CL approach to the semantics of the prepositions *in*, *on*, *at* have been presented by means of a language that can be considered as too specialised for 4ESO students. In fact, it could be said that students have been taught a CL theory of prepositional meaning, rather than having learnt from exercises adapting said CL theory to their instructional level. The lack of a proper adaptation of the theoretical materials to the students is due both to the time constraints mentioned above in relation to the period available to implement the experiment, and to the lack of materials to be used as reference.

6. CONCLUSION

In the present study, an experimental comparison has been carried out in two 4ESO groups with the aim of testing the effectiveness of two distinct approaches to teaching the prepositions *in*, *on*, *at*: on the one hand, a CL approach based on the theoretical model of prepositional meaning developed by Navarro i Ferrando (1998); on the other hand, a traditional approach based on collocations. For this purpose, an experiment has been designed in which it has been hypothesised that the group following the CL approach would improve more their command on the target prepositions than the group taught by means of the traditional one.

The results obtained in this study corroborate our initial hypothesis in terms of two dimensions. On the one hand, the variation between the number of correct, incorrect and blank answers emitted in *Task 3* and *Task 2 + Task 3* in the pre-test and the post-test by students in the experimental group has been more positive than in the control group. In addition, the class in which a greater number of students have improved their achievements between the initial and the final questionnaires has also been the experimental group. More importantly, these results demonstrate that the field of CL has yet much to offer to the world of language pedagogy, and particularly to the teaching of prepositions.

However, the data gathered in relation to the number of students who have improved their results in *Task 2* have been more positive in the control group. In the light of these results, it has been argued that the difference in motivation between the students in the experimental and the control group has played an important role. Similarly, there has been great proportion of students in the control and experimental groups who have obtained worse results in the post-test than in the pre-test. Thus, this situation has been argued to have been provoked by the coincidence of a series of factors in the experimental conditions that might have had a negative effect on the results. These factors are motivation, confidence, class attendance, timing, and the design of the teaching materials.

The main conclusion that can be extracted from obtaining these apparently contradictory results is that more research is needed in order to corroborate whether, and to what extent, can the negative results obtained in the experiment be attributable to the factors mentioned above. For this, studies similar to the present one, and others carried out longitudinally and with a larger number of participants need to be implemented. In addition, the difficulty to find and design suitable materials for the implementation of the theoretical principles of CL in Secondary Education suggests the necessity of research projects that follow the lines

opened by Boers (2013); Johansson Falck (2018); Lindstromberg (1996; 1998); Navarro i Ferrando, Campoy & Caballero (2001); or Song (2013).

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8. APPENDICES

Appendix 1. Model A (pre-test)

Name:	Group:	Date:	Model A
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PREPOSITIONS IN ENGLISH

Task 1) The prepositions *in*, *on*, and *at* can be used to express locations (place) and time. Write three sentences that show these uses. Try to use varied structures:

Time

in

on

at

Place

in

on

at

Task 2) Fill in the gaps in the following sentences using the prepositions *in, on, at*:

1. I don't like working_____night.
2. I don't know where my umbrella is. Perhaps I left it _____the bus.
3. Kate and I arrived _____the same time.
4. It was a short book to read. I read it _____a day.
5. The garden is _____the back of the house.
6. I usually have lunch together with my family _____Christmas day.
7. All the rooms _____the hotel have air conditioning.
8. Why are you never _____time? You always keep everybody waiting.
9. Will you throw a party _____your birthday?
10. There is a label _____the bottle.
11. Nicola was wearing a silver ring _____her little finger.
12. There was an accident _____the crossroads this morning.
13. Paul got married _____April.
14. Could you write your address _____the back of this card?
15. My car is being repaired. It will be ready _____two hours.
16. They never go out _____Sunday evenings.

17. The players shook hands_____the end of the concert.
18. In most countries people drive_____the right.
19. I tried learning German, but I gave up_____the end.
20. Would you like sugar _____ your coffee?
21. Have you seen the picture _____ today's newspaper?
22. We had seats_____the front row of the theatre.
23. Anna's mother is_____hospital.
24. My brother is an engineer, but he doesn't have a job_____the moment.
25. Sue got married_____18 May 2008.
26. I'll be there_____the afternoon.
27. We often have a short holiday_____Christmas.
28. _____the end of the street, there is a path leading to the river.
29. I haven't seen Kate for some time. I last saw her_____David's wedding.
30. Does this train stop_____Oxford?

Task 3) Complete the sentences with the most appropriate items and a preposition (*in, on, at*):

the coast	the supermarket	the island
the end	the Middle Ages	the world

1. Many of Europe's great cathedrals were built_____.
2. What is the tallest building_____?
3. To my surprise, I was offered a job_____of the interview.
4. There's nobody living_____. It's uninhabited.
5. The town you live in - is it_____?
6. There was a robbery_____.

Task 4) When answering questions 1, 2 and 3...

1. **Have you followed any rule to choose the right preposition? Can you give me some examples? Where have you learnt it?** (For example, I use *in* with *months* and *years*, and *on* for *days*).

2. **If you haven't followed any rule, how have you decided what preposition was the correct one in each case?**
 - I have answered randomly.
 - Because it sounds right to me.
 - I don't know.
 - Others:

3. **What question have you found more difficult? Why?**

4. **Other comments.**

Appendix 2. Model B (pre-test)

Name:	Group:	Date:	Model B
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PREPOSITIONS IN ENGLISH

Task 1) The prepositions *in*, *on*, and *at* can be used to express locations (place) and time. Write three sentences that show these uses. Try to use varied structures:

Time

in

on

at

Place

in

on

at

Task 2) Fill in the gaps in the following sentences using the prepositions *in, on, at*:

1. I'll see you _____ the morning.
2. Were there many people _____ the meeting?
3. I've been invited to a wedding _____ 14 February.
4. 'Can I speak to Dan?' 'I'm afraid he is busy _____ the moment'
5. We were _____ the back, so we couldn't see very well.
6. The 11.45 train left _____ time.
7. I'm going away _____ the end of January.
8. I was sitting _____ the back of the car when we crashed.
9. Mary and David always go out for dinner _____ their wedding anniversary.
10. I like that picture hanging _____ the wall.
11. We had a lot of problems with our car. We sold it _____ the end.
12. There is a dirty mark _____ your nose.
13. I wrote the date _____ the back of the photo.
14. I'm busy right now, but I'll be with you _____ a moment.
15. There were people swimming _____ the river.
16. Who is the woman _____ that photo?

17. Some people are _____ prison for crimes they did not commit.
18. . There are usually a lot of parties _____ New Year's Eve.
19. Do you usually give presents to each other _____ Christmas?
20. It's always cold _____ Helen's house.
21. If the sky is clear, you can see the stars _____ night.
22. I enjoyed the flight, but the food _____ the plane wasn't very nice.
23. My phone and the doorbell rang _____ the same time.
24. Do you work _____ Saturday evenings?
25. Write your name _____ the top of the page.
26. It was a very slow train. It stopped _____ every station.
27. Electricity prices are rising up _____ October.
28. Turn left _____ the roundabout.
29. I learnt to drive _____ four weeks.
30. In Britain we drive _____ the left.

Task 3) Complete the sentences with the most appropriate items and a preposition (*in, on, at*):

the end	the furniture department	Helen's house
the way	my guitar	the 1920s

1. Joe works _____ of a large storage.
2. Jazz became popular in the United States _____.
3. I was _____ last night.
4. The students had a party _____ of the course.
5. One of the strings _____ is broken.
6. We stopped to buy some things _____ home.

Task 4) When answering questions 1, 2 and 3...

1. **Have you followed any rule to choose the right preposition? Can you give me some examples? Where have you learnt it?** (For example, I use *in* with *months* and *years*, and *on* for *days*).

2. **If you haven't followed any rule, how have you decided what preposition was the correct one in each case?**
 - I have answered randomly.
 - Because it sounds right to me.
 - I don't know.
 - Others:

3. **What question have you found more difficult? Why?**

4. **Other comments.**

Appendix 3. Model A (post-test)

Name:	Group:	Date:	Model A
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PREPOSITIONS IN ENGLISH

Task 1) The prepositions *in*, *on*, and *at* can be used to express locations (place) and time. Write three sentences that show these uses. Try to use varied structures:

Time

in

on

at

Place

in

on

at

Task 2) Fill in the gaps in the following sentences using the prepositions *in, on, at*:

1. I don't like working_____ night.
2. I don't know where my umbrella is. Perhaps I left it _____the bus.
3. Kate and I arrived _____the same time.
4. It was a short book to read. I read it _____a day.
5. The garden is _____the back of the house.
6. I usually have lunch together with my family _____Christmas day.
7. All the rooms _____the hotel have air conditioning.
8. Why are you never _____time? You always keep everybody waiting.
9. Will you throw a party _____your birthday?
10. There is a label _____the bottle.
11. Nicola was wearing a silver ring _____her little finger.
12. There was an accident _____the crossroads this morning.
13. Paul got married _____April.
14. Could you write your address _____the back of this card?
15. My car is being repaired. It will be ready _____two hours.
16. They never go out _____Sunday evenings.

17. The players shook hands_____the end of the concert.
18. In most countries people drive_____the right.
19. I tried learning German, but I gave up_____the end.
20. Would you like sugar _____ your coffee?
21. Have you seen the picture _____ today's newspaper?
22. We had seats_____the front row of the theatre.
23. Anna's mother is_____hospital.
24. My brother is an engineer, but he doesn't have a job_____the moment.
25. Sue got married_____18 May 2008.
26. I'll be there_____the afternoon.
27. We often have a short holiday_____Christmas.
28. _____the end of the street, there is a path leading to the river.
29. I haven't seen Kate for some time. I last saw her_____David's wedding.
30. Does this train stop_____Oxford?

Task 3) Complete the sentences with the most appropriate items and a preposition (*in, on, at*):

the coast	the supermarket	the island
the end	the Middle Ages	the world

1. Many of Europe's great cathedrals were built_____.
2. What is the tallest building_____?
3. To my surprise, I was offered a job _____ of the interview.
4. There's nobody living_____. It's uninhabited.
5. The town you live in - is it _____?
6. There was a robbery_____.

Task 4) When answering questions 1, 2 and 3 this time...

1. **Have you followed any rule to choose the right preposition? Can you give me some examples?** (For example, I use *in* with *months* and *years*, and *on* for *days*).

2. **If you haven't followed any rule, how have you decided what preposition was the correct one in each case?**
 - I have answered randomly.
 - Because it sounds right to me.
 - I don't know.
 - Others:

3. **What question(s) or type of preposition are more difficult? Why?**

4. **Do you feel that you have learnt something useful?**

5. **Other comments.**

Appendix 4. Model B (post-test)

Name:	Group:	Date:	Model B
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PREPOSITIONS IN ENGLISH

Task 1) The prepositions *in*, *on*, and *at* can be used to express locations (place) and time. Write three sentences that show these uses. Try to use varied structures:

Time

in

on

at

Place

in

on

at

Task 2) Fill in the gaps in the following sentences using the prepositions *in, on, at*:

1. I'll see you _____ the morning.
2. Were there many people _____ the meeting?
3. I've been invited to a wedding _____ 14 February.
4. 'Can I speak to Dan?' 'I'm afraid he is busy _____ the moment'
5. We were _____ the back, so we couldn't see very well.
6. The 11.45 train left _____ time.
7. I'm going away _____ the end of January.
8. I was sitting _____ the back of the car when we crashed.
9. Mary and David always go out for dinner _____ their wedding anniversary.
10. I like that picture hanging _____ the wall.
11. We had a lot of problems with our car. We sold it _____ the end.
12. There is a dirty mark _____ your nose.
13. I wrote the date _____ the back of the photo.
14. I'm busy right now, but I'll be with you _____ a moment.
15. There were people swimming _____ the river.
16. Who is the woman _____ that photo?

17. Some people are _____ prison for crimes they did not commit.
18. . There are usually a lot of parties _____ New Year's Eve.
19. Do you usually give presents to each other _____ Christmas?
20. It's always cold _____ Helen's house.
21. If the sky is clear, you can see the stars _____ night.
22. I enjoyed the flight, but the food _____ the plane wasn't very nice.
23. My phone and the doorbell rang _____ the same time.
24. Do you work _____ Saturday evenings?
25. Write your name _____ the top of the page.
26. It was a very slow train. It stopped _____ every station.
27. Electricity prices are rising up _____ October.
28. Turn left _____ the roundabout.
29. I learnt to drive _____ four weeks.
30. In Britain we drive _____ the left.

Task 3) Complete the sentences with the most appropriate items and a preposition (*in, on, at*):

the end	the furniture department	Helen's house
the way	my guitar	the 1920s

1. Joe works _____ of a large storage.
2. Jazz became popular in the United States _____.
3. I was _____ last night.
4. The students had a party _____ of the course.
5. One of the strings _____ is broken.
6. We stopped to buy some things _____ home.

Task 4) When answering questions 1, 2 and 3 this time...

1. **Have you followed any rule to choose the right preposition? Can you give me some examples?** (For example, I use *in* with *months* and *years*, and *on* for *days*).

2. **If you haven't followed any rule, how have you decided what preposition was the correct one in each case?**
 - I have answered randomly.
 - Because it sounds right to me.
 - I don't know.
 - Others:

3. **What question(s) or type of preposition are more difficult? Why?**

4. **Do you feel that you have learnt something useful?**

5. **Other comments.**

Appendix 5. Powerpoint slides. Teaching materials control group I (spatial meanings)

Teaching prepositions:

IN – ON – AT

Spatial meanings

Lidón Prade Yerves

1

INTRODUCTION

Prepositions are LINKING words:

! live in Castelló.

(You) leave the keys at the reception.

George was sitting on the bench.




2

Now you

The man is flying on a plane.

The girl is singing in her car.

The dog is standing at the door.




3

Now you

The man is flying on a plane.

The girl is singing in her car.

The dog is standing at the door.



4


PREPOSITIONAL MEANING

- Prepositions have a meaning that indicates the type relationship between the two concepts they link.

! live in Castelló.

(You) leave the keys at the reception.

George was sitting on the bench.



5

MEANINGS OF IN

IN	At a point within an area or surface	The kids are playing in the street
	Within the shape of something/ surrounded by something	I read about the event in the newspaper
		She is sitting in an armchair

Leave the key in the lock

6

Definition 1 or 2?



7

Definition 1 or 2?

The mouse is in the purse	definition 2
in Paris	definition 1
in the bottle	definition 2
in the newspaper	definition 1
in the car	definition 1

8

MEANINGS OF ON

ON	In or into a position covering, touching or forming part of a surface	There is a picture on the wall Read the text on page 5
	Supported by someone or something	She is standing on one foot Hang your coat on the hook
	At or near a place	My house is on the Thames I like the town on the coast

9

Definition 1 or 2?



10

Definition 1 or 2?

The mouse is doing a handstand on the box.	definition 2
on the blackboard	definition 1
on the plate	definition 2
on the notice board	definition 1
on the ceiling	definition 1

11

MEANINGS OF AT

AT	Used to say where something or someone is or where something happens.	Does this train stop at Newport? The cat is at the top of the table
	Used to say where someone works or studies	She is at Yale. He works at the bank

12

Definition 1 or 2?



13

Definition 1 or 2?

the mouse is sitting at the table	definition 1 or 2
at home	definition 1
at a party	definition 1
at the door	definition 1
at the doctor	definition 1

14

Appendix 6. Powerpoint slides. Teaching materials control group II (temporal meanings)



Temporal meanings

in on at



Lidón Prades Yerves

1

Review

- Prepositions **link** other concepts
- Prepositional **meaning** = Type of **relation**
- **In, on, at** can express **spatial relations**

2

IN	At a point within an area or surface.	The kids are playing in the street. Paris is in France.
	Within the shape of something/ surrounded by something.	Leave the key in the lock. 
ON	In or into a position covering, touching or forming part of a surface.	There is a picture on the wall.
	Supported by someone or something.	She is standing on one foot.
	At or near a place.	I like the town on the coast. 
AT	Used to say where something or someone is, or where something happens.	Does this train stop at Newport?
	Used to say where someone works or studies.	He works at the bank.

3

Review

Prepositions **link** other concepts

Prepositional **meaning** = Type of **relation**

In, on, at can express **spatial relations**



They can also have **temporal meanings**



4

IN

IN	During a (long) period of time	<ul style="list-style-type: none"> • in 2005 • in the 18th century • in spring /summer/ autumn/ winter • in March • in the morning/ afternoon/evening
	After a particular length of time	<ul style="list-style-type: none"> • in a few minutes • in three weeks

5

ON

ON	Used to say a day or date	<ul style="list-style-type: none"> • on Sunday • on the evening of May 1st • on one occasion • on your birthday
	Immediately after something	<ul style="list-style-type: none"> • on arriving home I discovered they had left • please, report to reception on arrival

6

AT

AT

Used to say when something happens

- at 2 o'clock
- at the end of the week/ at weekend
- at night

Used to state the age at which someone does something

- at the age of 16
- at 25

7



8



9

Tuesday Morning

NOW



10

Appendix 7. Powerpoint slides. Teaching materials experimental group I (spatial meanings)

Teaching prepositions:

IN – ON – AT

Spatial meanings

1

INTRODUCTION

Prepositions are LINKING / RELATIONAL words:

I live in Castelló.

(You) leave the keys at the reception.


George was sitting on the bench.

2

When we express a sentence, we represent it in our mind.

Like in the sentence, prepositions represent a RELATION between two concepts in our mind.

The concepts LINKED by the preposition are called Trajector (Tr) and a Landmark (Lm).



3

Examples

I live in Castelló.


Tr Lm

(You) leave the keys at the reception.

Tr Lm

George was sitting on the bench.

Tr Lm




4

Now you

The man is flying on a plane.

The girl is singing in her car.

The dog is standing at the door.




5

Now you

The man is flying on a plane.

The girl is singing in her car.

The dog is standing at the door.



6

MEANING DIMENSIONS

- The **meaning** of a preposition can express 3 dimensions:

- **TOPOLOGY**: position of **Tr** and **Lm**.
- **DYNAMICS**: movement of **Tr** and **Lm**.
- **FUNCTION**: effect of **Tr** over **Lm** and vice-versa.



7

EXAMPLE 1

(You) leave the keys **at** the **reception**.



- **Topology**: **Tr** and **Lm** are close, proximity
- **Dynamics**: **Tr** moves frontally towards **Lm**
- **Function**: **Tr** has an intention at the **Lm**: to leave the keys.

8

EXAMPLE 2

She is sitting **at** the **table**.



- **Topology**: **Tr** and **Lm** are close, proximity
- **Dynamics**: **Tr** is oriented frontally towards **Lm**
- **Function**: **Tr** has an intention at the **Lm**: to eat

9



The 3 meaning dimensions of prepositions can be represented by an **IMAGE-SCHEMA**:

10

IN: "CONTAINMENT"



TOPOLOGY	DYNAMICS	FUNCTION
Inclusion : Lm defines a region where the Tr is located.	Tr can be static or dynamic. It can move inside the Lm , or from outside to inside. Lm prevents Tr from moving out.	Control : Reclusion or Protection of Lm over Tr .

11

EXAMPLE :

She is swimming **in** the **sea**.

TOPOLOGY: inclusion: the **sea** defines a region where the **girl** is
DYNAMICS: **girl** moves inside the **ocean**
FUNCTION: **girl** is "recluded" by the **sea**



12

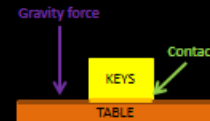
ON: "SUPPORT"



TOPOLOGY	DYNAMICS	FUNCTION
Contact: between the outside part of Lm and the resting side of Tr .	Verticality: the Tr 's resting side is orientated and exerts force downwards to the Lm , it is "standing up on it".	Control: Self-control or motion control of Tr over Lm .

13

EXAMPLE: His keys were on the table.



TOPOLOGY: the **keys** are in contact with the **table**
DYNAMICS: verticality (**keys** "standing" on **table**)
FUNCTION: **Tr** (**keys**) "can move" over **Lm** (self-motion/motioncontrol)

14

AT: "ENCOUNTER"



TOPOLOGY	DYNAMICS	FUNCTION
Contiguity/proximity: Tr and Lm are close (contact is not necessary).	Tr is oriented frontally towards the Lm .	Intentionality: Tr uses/ manipulates/ affects Lm , face-to-face.

15

EXAMPLE: The man is standing at the door.



TOPOLOGY: contiguity (without contact) the **man** is close to the **door**
DYNAMICS: the **man** is oriented frontally towards the **door**
FUNCTION: intentionality: the **man** is at the **door** because he wants to enter/ look inside

16

Appendix 8. Powerpoint slides. Teaching materials experimental group II (temporal meanings)

Teaching prepositions II:

IN – ON – AT

Temporal meanings

1

REVIEW


- Trajector (Tr) and Landmark (Lm)
- Meaning dimensions:
 - > TOPOLOGY: position of Tr and Lm.
 - > DYNAMICS: movement, orientation of Tr and Lm.
 - > FUNCTION: effect of Tr over Lm and vice-versa.

↓

Can be represented as an **image-schema**...

2


IN: "CONTAINMENT"



TOPOLOGY	DYNAMICS	FUNCTION
Inclusion: Lm defines a region where the Tr is located.	Tr can be static or dynamic. It can move inside the Lm, or from outside to inside. Lm prevents Tr from moving out.	Control: Reclusion or Protection of Lm over Tr.

3


ON: "SUPPORT"



TOPOLOGY	DYNAMICS	FUNCTION
Contact: between the outside part of Lm and the resting side of Tr.	Verticality: the Tr's resting side is orientated and exerts force downwards to the Lm, it is "standing up on it".	Control: Self-control or motion control of Tr over Lm.

4


AT: "ENCOUNTER"



TOPOLOGY	DYNAMICS	FUNCTION
Contiguity/proximity: Tr and Lm are close (contact is not necessary).	Tr is oriented frontally towards the Lm.	Intentionality: Tr uses/ manipulates/ affects Lm, face-to-face.

5

- IN=CONTAINMENT
- The Lm CONTAINS the Tr.



- ON=SUPPORT
- The Lm SUPPORTS the Tr. They are in CONTACT.

- AT=ENCOUNTER
- The Tr is NEAR the Lm ("a point"). The Tr has an INTENTION in relation to the Lm.

6

Temporal meanings

"Time metaphor"

We represent **time** (abstract) **as space** (physical) in order to understand it.

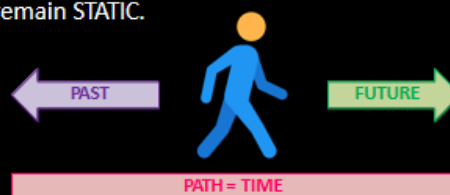
Examples:

"The future is waiting for you"
"I left my past behind"

7

Time metaphor

- In Western culture, **TIME=PATH** in which the future is **AHEAD**.
- In a **path (Lm)**, **we (Tr)** can MOVE or we can remain **STATIC**.



8

AT: Stative sense

- **Topology:** contiguity. The **Tr** coincides with short periods or points in time (**Lm**).
- **Dynamics:** the dynamic dimension is not important (this sense is stative)
- **Function:** intentionality. The time is employed for a purpose.

9

AT

Used with periods like:

1. Parts of the day *at night, at dawn, at dusk, at noon, at midnight, at day time ...*
2. If the part of the day is "now": *at present, at the moment, at the same time.*
3. *Parts of periods of time at the end of the day, at the start..., at the end of the week (= at the weekend)*
4. Hours: *at 4.55*
5. Other periods like *at Christmas*.

10

Example

I don't like going out **at night**.

Topology: the night is "a point" at the end of the day. The exact point is not clear-cut, it is **near** the end of the day.

Function: the night has a "purpose"; it is the time the person uses to go out.



11

ON: Dynamic sense

- **Topology:** The **Tr** is in **contact** with the period while it lasts, or with successive parts of it. Because of this, the event (**Tr**) can be located at any point of the period referred to (**Lm**).
- **Dynamics:** The **Tr** is "standing on" the period of time (**Lm**).
- **Function:** The functional dimension is not important in the temporal sense of **on**.

12

ON

Used with:

1. *dates (on 21st May)*
2. *the days of the week*
3. *expressions referring to a day (your birthday/ anniversary, Christmas day)*
4. *parts of a day (the evening of May 1st)*
5. *"Limit expressions": on time, later on, from + [period of time] + on.*

The **Tr** may be located on the time path at several points: *On+ing (on arriving,...)*

13

Example

I'll see you **on** Friday.

Topology: the action of "seeing you" can happen at any point while it is Friday.

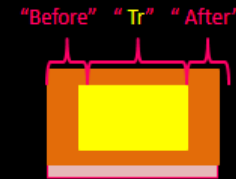
Dynamics: the person "is standing on" the day as if it was.



14

IN

- **Topology:** the **Tr** is coincides with a period of time that is part of **another period**. Therefore, 2 periods are considered: **a period before, the period with the Tr; and another period after it.**
- **Dynamics, Function:** are not important in this usage.



15

IN

1. Used with landmarks that are periods with subperiods:
 1. *months*
 2. *years, centuries, historical periods*
 3. *Seasons*
 4. *parts of the day (morning, evening...)*
2. Idiomatic expressions like *in time, in due time, in advance*
3. The period occupied by the **Tr** coincides with the end of the period denoted by the **Lm**: *I'll be back in ten minutes*
4. The time it takes to do something: *I finished my homework in an hour*

16

Example

The price of electricity is going up **in** October.

Topology: the moment of the increase of the price is **cointained** within October. There is a "before" in which the price will be lower than in October, and an "after" in which it will be as high as in October

17

Appendix 9. Exercises: spatial meanings (control and experimental group). Taken from Song (2013)

A. Gaps.

Match the sentences to the pictures and then use “in”, “on” or “at” to fill in the gaps.

1. Mother is ____ the kitchen making a cake.
2. The milk is ____ a paper cup with the drawing of a cow ____ it.
3. The ghost is standing ____ the box.
4. The teapot and the cups are ____ the table.
5. The teacher is teaching ____ the table.



B. Multiple choices.

Choose the right preposition that goes with the sentence.

1. The dog is ____ my feet.
a. in b. on c. at
2. Pencils are ____ the notebook.
a. in b. on c. at
3. The boy is playing ____ the chair.
a. in b. on c. at
4. The dog is ____ the basket.
a. in b. on c. at
5. The boy is sitting ____ the computer.
a. in b. on c. at
6. He is ____ the gym.
a. in b. on c. at
7. I like to meet you ____ the airport.
a. in b. on c. at
8. ____ the end of the street, there is a path leading to the river.
a. in b. on c. at
9. I don't like cities. I like to live ____ the country.
a. in b. on c. at
10. There is a notice ____ the door. It says "Do not Disturb".
a. in b. on c. at
11. They live ____ Carlisle Street.
a. in b. on c. at
12. We spent a few days ____ New York.
a. in b. on c. at



Appendix 10. Exercises: temporal meanings (control and experimental group). Taken from Song (2013)

A. Choose the correct option

John is going to Paris at/on/in May.

What time does it finish? At/ On/ In 9:30.

There are lots of buses at/ Ø/in the evening, but not at/on/in night.

Children are always so happy at/on/in Christmas.

I go out at/on/ Ø every Friday night.

They will arrive at/on/in Sunday night.

My birthday is at/ on/in June 22nd.

“Bye-bye Ann! See you Ø/on/in this evening”.

I’m going to Algarve at/on/in winter.

He’s coming home at/on/in Wednesday.

B. Match the halves to make complete sentences/ questions.

- | | |
|------------------------------|--------------------------------|
| 1. What are you doing next | a) Sunday mornings? |
| 2. Do you go on a holiday at | b) February 25 th . |
| 3. She can’t talk to you at | c) the morning. |
| 4. I see my parents every | d) weekend? |
| 5. What do you usually do on | e) weekend. |
| 6. Sue married in | f) the moment. She’s out. |
| 7. The letter is posted on | g) 1992. |
| 8. We have classes in | h) Easter? |